

Part 2

INTRODUCTION TO PART TWO: A COGNITIVE-PSYCHOLOGICAL PERSPECTIVE ON READING

Part Two considers reading from a cognitive-psychological perspective. First the interpretations and recommendations of two further distinguished literacy educators will be presented. These particular scholars have made a major contribution to current literacy policy in England. They draw on psycho-linguistic ideas in their recommendations and suggestions but a major thrust of their thinking is informed by a cognitive-psychological theory of literacy.

Following the transcripts of our two scholars, the following themes will be considered in some detail: the stages learners go through as they become more sophisticated readers, the practical implications for the classroom of this evidence, phonological and phonemic awareness, and comprehension development and reading to learn. Finally, this part will consider the impact that the cognitive-psychological approach has had on policy and practice.

LAURA HUXFORD'S OBSERVATIONS, SUGGESTIONS AND THEORETICAL PERSPECTIVES

Profile of Laura Huxford

Laura taught mainly in primary schools and children with special educational needs. She also taught and led pre-service and in-service teacher education courses at what is now the University of Gloucestershire. She used music analysis extensively in courses to enable teachers to understand how children orchestrate strategies when reading. Her PhD was about young children's developing reading and writing. She became Director of Training for the National Literacy Strategy in 1998. Since then she has produced *Progression in Phonics*, *Developing Early Writing*, *Grammar for Writing* and the *Additional Literacy Support Programme* within the NLS.

What follows is a summary of Laura's observations of Stephen. Her recommendations to his teacher are outlined and the theoretical rationale underpinning those suggestions is highlighted. Laura participated in the symposium at the United Kingdom Reading Association's annual conference in Oxford 2000 in which a group of scholars presented their interpretations of Stephen as a reader and how he could be supported. These participants only had the video and transcript evidence of Stephen's reading and retelling at that point – they did not have any other information about him or his learning context. What follows is based, for the most part, on that presentation, on Laura's own notes of her presentation and to a lesser extent on an interview I conducted with her some time later. I was especially interested in Laura's response to the four key questions:

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- 1 What do we know about Stephen as a reader?
- 2 What else would you like to know about him?
- 3 What should his teacher do to enhance his reading?
- 4 What theoretical perspectives underpin your suggestions?

Laura's first impressions of Stephen

Laura described her first impressions of Stephen as follows:

He is willing and even keen to flip through the books on display but he's shy, slow, hesitant reader expecting the teacher to tell him words he doesn't know. He makes little attempt to use any cueing systems other than occasionally sounding out words. He gives the impression he may have been drilled in phonics at the expense of other strategies. He is probably reading too slowly to make sense of the text – i.e. the context strategy searchlight cannot come into play. His ability to retell some of the narrative may have been dependent on the pictures or from hearing the book read before. It is unlikely he is making much sense out of the text.

What Stephen appears to be able to do

Following a closer examination of the video evidence, Laura listed all the knowledge and skills that Stephen appeared to have. In doing this she speculated about the thinking that Stephen was engaged in as he read.

- *Word recognition*: He read correctly most of the words; many were high-frequency words but he also read naughtily, woke, school, friend, peanut, and anywhere. These could be in his sight vocabulary; some may have been deduced from the text if he were making meaning. He was particularly able on words with apostrophe omission e.g. doesn't, wouldn't, didn't, wasn't, that's, don't. He picked up the word threw on its second appearance.
- *Phonics*: He showed he could make correct letter to sound correspondences and could blend consonant-vowel-consonant (CVC). He was prepared to have a go at other words and knew that building words from letters was an option e.g. after.
- *Grammar*: Stephen used grammatical knowledge. Where he did make an error, the error was almost always grammatically plausible, e.g. She was looking at the feathers (07-10). He substituted The for She (07) – a new sentence could start with The – and later he said a for the (09). Other grammatically plausible errors and self-corrections included: did for does (55), he for I (58), keep for kept (63), track for tunnel (126), came for crept (167).

- *Context:* Stephen is reading for meaning. Instances where Stephen's substitutions indicated that he had obviously understood what he was reading and was trying to continue to make sense are came for crept (167) and track for tunnel (126). At 07 where he substituted The for She, he stopped reading. We don't know what he was doing in that pause. He had read The but wouldn't read on even though the teacher's finger was on the next word was. Could it be that he realized that The was would not make sense? He read was without hesitation on subsequent occasions. A similar situation occurred later with the words she and looked (22). He said the again and refused to read on to the word looked even though he knew the word, as evidenced by his reading it correctly later in the text.
- *Orchestrating the strategies:* Most of the substitutions had a similarity in at least the initial letter indicating that Stephen was combining his knowledge of letters with another strategy either grammatical or contextual (or both).

What Stephen appears not to be able to do

Laura identified four key areas of reading in which Stephen showed himself to have particular weaknesses.

- 1 He was reluctant to have a go at the longer words which were not in his sight vocabulary either by guessing from the context or sounding out. He tended to expect the teacher to tell him.
- 2 He didn't correct himself very often, but he didn't make many errors to correct as he was told most of the words he didn't know.
- 3 He may have been using word-building strategies i.e. analogy, chunking in some of the words he read correctly, but we have no way of knowing. But he didn't have an effective strategy for tackling long words. If he attempted them at all, he tended to start at the beginning and say all the letters. He didn't appear to know the vowel digraphs except possibly ee (feeding) e.g. he sounded out threw as thr - e - w. In summary, he is at a fairly basic level in the use of phonics i.e. he can blend CVC words and knows that word building is an option.
- 4 He wasn't reading with much expression or sense of meaning. Although he was reading most words correctly, there were still too many which he needed to pay attention to, to get fluency.

Comparing first impressions with in-depth analysis

Laura compared her initial impressions with those she obtained through her more detailed and close observation of Stephen reading and retelling to his teacher.

Contrary to first impressions, Stephen must have been getting the sense out of this book, not just in an overarching way from the pictures but word by word, otherwise he could not have made errors which were semantically/grammatically plausible with such consistency. Furthermore, he was concerned to make sense – as indicated by the refusal to read the next word when he knew what it was (page 9). Nevertheless, he was manifestly not imparting meaning to the listener and his interest in the book (perhaps in reading) was not evident. What appeared to be a reasonable grasp of phonics was probably much more limited. He showed that he could read CVC words and he tried to sound out other words but often he didn't have the phonic knowledge to recognize digraphs or a strategy to deal with two-syllable words.

Evidence Laura would need to make a more informed judgement

These are the questions that Laura posed in relation to the evidence she would like to have about Stephen in order to make a more informed judgement about him as a reader. She would like answers to all these questions.

- 1 Was this his typical reading behaviour?
- 2 What support was he having at home?
- 3 What was his attitude to reading? For example, does he ever read voluntarily?
- 4 Did he enjoy reading 'information' books?
- 5 Does the teacher use shared and guided reading with the class?
- 6 What was the classroom reading environment like?
- 7 How often did he read – to an adult? – independently?
- 8 How recently had he learned to blend CVC words?
- 9 Could he write CVC words and words with adjacent consonants?
- 10 Had he been systematically taught vowel digraphs?
- 11 What strategies was he being taught for tackling two-syllable words?

What his teacher might do

Laura went on to describe the teaching approach Stephen's teacher might use to advance his reading skills and attitudes. She says:

- 1 If he's alone in the class in his apathy to books, appeal to his interests, provide appropriate material, write notes to him, fix up a fax/email correspondent.
- 2 If the class is generally unmotivated in reading, get going with something exciting – use drama, get them involved with communicating

outside the class – generally create genuine and exciting purposes for reading and writing.

3 Model reading strategies in shared reading.

4 Get him to remind the rest of the group of the range of reading strategies in guided reading and expect him to demonstrate his use of them. At first show him what strategies he is using; later, ask him what strategy he thinks he is using. Encourage him to cross-check with another strategy when he has figured out an unknown word e.g. if he has used a couple of letters and then deduced the rest from the context, make sure he matches the word on the page with the word he said and then get him to tell you sounds for all parts of the word. This is a way to becoming autonomous by teaching himself how words are formed.

5 Give him books with fewer words he has to tussle with. He was at frustration level with this book. He shouldn't need to wonder about more than one word per sentence. If he is given a book with more new words than this, they should be primed in some way before or as he reads.

6 Find a way to increase reading 'bulk' by either using a buddy system in school or establishing a regular reading slot at home (or both).

7 Place him on the appropriate Additional Literacy Support (ALS) module: in the phonics programme he probably needs vowel digraphs, tackling long words, and past tense verbs.

8 Fluency building: ask him to find the next full stop and to read to it.

9 Read to the class a lot, including non-fiction.

10 Find plenty of excuses to write – writing will spur his ability to decode better than anything and may well be the key to motivation.

11 Make the whole business fun!

Underpinning reading theory

Laura noted that much of the theory underpinning the above analysis is contained in the research reviews by Marilyn Adams (1990) and Clay (2001). The observations and suggestions also draw on the work of Chomsky, Ehri, Frith, Goodman, Holdaway, Rumelhart, and Stanovich.

I would suggest that the theoretical perspective of all these researchers could be conveniently described as straddling the psycho-linguistic and cognitive-psychological perspectives on the reading process. In view of Laura Huxford's professional role it is not surprising that these theoretical perspectives also strongly underpin the National Literacy Strategy. These perspectives are explained and discussed more fully below.

DAVID WRAY'S OBSERVATIONS, SUGGESTIONS AND THEORETICAL PERSPECTIVES

Profile of David Wray

David Wray taught in primary schools for 10 years and is currently Professor of Literacy Education at the University of Warwick. He has published over 30 books on aspects of literacy teaching and is best known for his work on developing teaching strategies to help pupils access the curriculum through literacy. This results in such innovations as the Extending Interactions with Texts (EXIT) model to guide the teaching of reading to learn, and writing frames to help with the writing of factual text types. His work has been made an integral part of the National Literacy Strategy at both primary and secondary levels. His major recent publications include: *English 7-11* (Wray 1995); *Developing Children's Non-Fiction Writing* (Wray and Lewis 1995); *Writing Frames* (Lewis and Wray 1996); *Extending Literacy* (Wray and Lewis 1997); *Writing Across the Curriculum* (Lewis and Wray 1998); *Literacy in the Secondary School* (Lewis and Wray 1999); and *Teaching Literacy Effectively* (Wray et al. 2001).

This is an edited version of a telephone conversation I conducted with David in February 2002.

KATHY HALL (KH): Thank you, David, for agreeing to do this interview by telephone. I appreciate the time you've taken to participate in the project.

What do you feel we know about Stephen as a reader?

DAVID WRAY (DW): The first thing is the lack of confidence which is apparent from the very beginning. I thought that was an interesting feature. He started off very lacking in confidence and hesitant, but as he got going, and in the second bit of reading, he was doing very well. He got a bit of a head of steam going. He recognized some words in that second section that were much more difficult I think than some he didn't recognize in the first section. Once you get going, it's confidence really and this is what happened with Stephen here, I think.

There's quite a bit of reliance on context especially picture cues. Although there was some evidence that he was using phonics I thought what he wasn't doing terribly well is blending. He was able to recognize initial sounds and sounds by themselves, but pulling them together seemed to be the difficult part of it for him. Even though he read that first section very hesitatingly, it was quite impressive how much he remembered from it. And that wasn't what I'd expected from looking at the video. I thought he would have remembered much less of what he'd read because the reading was so broken and so hesitant, but he did seem to understand the story quite well and could retell reasonably well, I thought.

So those are the kinds of things I think I would pick up about him as a reader.

KH: *Thanks for that. What else would you like to know about him?*

DW: I would like to know how he would read in rather less stressful circumstances. He was being videoed and also he was reading out loud. Reading aloud is stressful for many kids and this is part of the theory I will come onto later. It seems to me that reading aloud is not always the same as reading to yourself and you perform differently in the two contexts. And Stephen here is put under some stress and I want to know how he would read in less stressful circumstances, when there isn't such pressure.

How does he respond to reading? I'm thinking of things like: can he follow written instructions? When he's read descriptions in a story can he draw a reasonably accurate picture of what he's read? Can he use written information in his own subsequent writing? Those sorts of things are ways of getting at how kids read which don't require that oral performance. Those are the things I would like to know. I'd like to see him in different circumstances in order to know what he understands from his reading. I'd like to see him in situations that do not require oral performance.

If I were his teacher I would want to look more closely at his blending to see whether there were any contexts in which he could blend more effectively. I would want to look at what kind of circumstances I would be able to devise, and what games and activities I could devise to help him to do that, so the blending is something I'd want to work on.

KH: *What should his teacher do?*

DW: Three things.

First make the reading experience predominantly less stressful than it seems to be here. He clearly lacks confidence and I think his confidence needs building up by experience of success and it seems to me that success is the crucial thing. He has to experience reading as a good and pleasing experience. And that's not going to be the case if it's always going to be a performance. I think his teacher needs to give him lots more experience of reading silently and then having to do some follow-up activities to use what he's read. So that's the first thing – using comprehension in a different way.

The second is a technical thing and that is to work on his blending. Hopefully not decontextualized exercises but he does need some intensive work on pulling sounds together and making words.

Thirdly, and this is probably the one you would expect from me, I'd like to see him given a wider choice of reading. I'm always struck when kids are asked to choose in that context – there were five or six books on that table but not one of them was non-fiction. They were all storybooks. We haven't seen this child necessarily at his best because it may be that non-fiction texts would allow him to perform better. And teachers very often do that, they often assume that reading a story is the be-all and end-all, and it's not. There's lots that kids can read and choose to read by themselves. And so his teacher needs to give him wider choice and broaden the range. She might find texts that he is quite keen to read and willing to give more attention and energy to.

KH: *What theoretical perspectives underpin your suggestions?*

DW: The one I already mentioned – that is that I think reading aloud is different to reading silently. And I suppose miscue analysis has led us to think in this kind of way, that we assume that by analysing how a child reads aloud in response to a text would actually get us a very good picture of the reading strategies the child is using and so on. But I think we can be misled by this sometimes as it seems to me that by reading silently you can use quite different strategies to get at meaning and it can all take place much faster in a way. Miscue gives only a partial picture about reading. That's one theoretical thing I guess.

There's a more general thing about children's progress, and this is not just relevant to reading, it's relevant to learning anything. I think children have to succeed. It seems to me that the job of the teacher is to make sure that kids succeed at something. Of course there's an instructional role, but teachers need to make sure that children can do something well and help them to know they can do it well. I'm sure this isn't the normal experience

that Stephen has of reading. Clearly his teacher is very concerned about him and they have a very close relationship – you could tell that from the tape. But if that was his experience of reading then it's no wonder he's struggling. It's really highlighting what he doesn't do well. It makes the whole business a very painful thing to engage in so to help children do well they have to be allowed to succeed. Teachers have a responsibility to ensure that happens whatever it takes – whether it means reading very very simple texts, whether it means doing what she did do in fact, that is reading alongside, choral reading. And that's not just about reading; it's about learning generally.

And the third thing is what I would call privileging story, privileging narrative. And that's almost universal in primary schools, that kids learn to read on storybooks. It seems to me this is just so wide off the mark for many of them. And there is a gender thing; many of them, particularly boys, would respond much better to reading if it was about the kinds of worlds that they mentally inhabit themselves. When I think of my own 4-year-old who obviously is not reading yet, but when he chooses texts or things to talk about they're always about soldiers and cars and typical boys' things. They're all factual things, they're not fiction that he's engaged in. He's engaged in listing and naming and pulling things apart and looking at them. Now I want him when he starts reading to be allowed to choose texts which relate to his own interests, those predilections about how you interpret the world. And we often don't do that especially for boys – we offer a biased view of what counts as reading.

KH: *Can I just ask you about the people who influenced you most in your thinking?*

DW: A number of people influenced me. My initial introduction to literacy was done by Goodman and Smith – there's no doubt about that. These were the people whose ideas really struck home with me when I was a teacher and I was lucky enough to hear Ken Goodman speak at an UKRA conference when I was still teaching and it just made so much sense in terms of what I was seeing my kids doing and nobody had ever talked quite like that to me before, introducing those ideas. Obviously having looked at it in more detail I think there are parts where the Goodman ideas are not quite right – we've learned more, but that whole new take on what reading was about, it just opened my eyes. I would be a different person if I hadn't been introduced to Ken Goodman's ideas. And Frank Smith as well; Frank Smith is very challenging, looking at common sense and then saying, hang on, is that so common?

The other thing that got me into this whole business in the first place was doing an Open University course many many years ago, called reading development, and going on to do a diploma in reading development at that time. A lot of people of my generation around the country did that

course at the time. It produced a commonality of our experience and our philosophies I think, and that again introduced me to the whole idea of comprehension and what understanding was about. Context use – all those sorts of things in reading – and the fact that it wasn't just about saying things out loud and getting the words right, it was about understanding what you were doing, that was the crucial thing. Now of course I had thought about those things as a teacher but I hadn't really thought about them seriously so it was that course and I guess it was people like John Merritt who led that course – such people were very influential.

More recently I have been influenced by Marilyn Adams and she does have a new line on things and her ideas open your eyes to things we often forget.

KH: *And your own work over the years, the various projects you've done, for example the project on effective literacy teachers – presumably all that has shaped your thinking?*

DW: Yes, and here it's different kinds of people shaping one's thinking. Our work on non-fiction – that changed my thinking – obviously I had a feeling it was very important. It was working alongside teachers in classrooms who were inspiring their kids to do wonderful things. You might go along to a teacher and say I read this idea in an article, I wonder if you'd like to have a go and see if it works, and you come back two weeks later and they've done brilliant things with it – much more than I could ever do. I could list at least a dozen teachers' names who have been significant in that area of non-fiction. So it is teachers in classrooms that influence you there, more than any major theoretical insights. It's finding practical ways of responding to the theory that's the real challenge because the theory can't always be applied easily.

The effective teachers of literacy project – this was a privileged experience, being in classrooms with teachers who were very good at it, who were doing things far better than I could, how they kept all those different demands going, they were doing some staggering work.

KH: *Thank you very much.*

WORDS MATTER

Introduction

While the scholars whose suggestions we have presented so far clearly draw on psycho-linguistic perspectives in their interpretations of Stephen, to varying degrees they also incorporate suggestions that have a basis in cognitive psychology. For them there is no discontinuity or conflict in this eclecticism but what is interesting is the way they draw that balance, i.e. the relative emphasis, for example, placed on meaning and code breaking and the relative emphasis placed on systematic teaching of word recognition and on responding to print.

This section considers reading from a cognitive-psychological perspective; it reviews the contribution to our understanding of the reading process offered by this perspective; and it considers its impact in current policy. The point of this discussion is to invite you to develop a critical awareness of what this position on reading is, to understand the debates and unanswered questions and, on that basis, to begin to connect policies and practices on reading with their theoretical origins.

I will begin by summarizing some of the more controversial messages that the psycho-linguistic school of thought had delivered and go on to present an account of the findings arising from cognitive-psychological research on reading that questioned some of those messages. The extent to which some of our experts subscribed to the cognitive-psychological research is already evident in the interview data but we will revisit their specific suggestions occasionally in the light of a fuller account of the theory.

Although you have only had interpretations of Stephen and his reading needs from four scholars so far, you will have noticed that all of them (and indeed others whom we introduce later) referred to the need to improve his word recognition level and to develop his fluency in reading. Effective teaching in decoding and fluency is critical for Stephen and pupils having this kind of difficulty need high-quality and explicit decoding strategy teaching. You may have other readers who have adequate decoding facility but still read slowly, without much intonation, expression or emphasis. They may pronounce all the words right but still struggle to read. The cognitive-psychological perspective on reading has made a considerable contribution to our understanding of what is involved in these processes.

I have already stressed the major contribution that the psycho-linguistic approach made to our understanding of reading and its development. But if you also look at reading through a cognitive-psychological lens, you are likely to extend the range of strategies in your teaching repertoire.

Five major questions can be usefully debated now. These are:

- To what extent can we characterize the reader as progressing through stages, or is a non-stage model acceptable and what are the pedagogical implications of this?
- What is phonological awareness and what is its significance?
- How are phonological awareness and phonic knowledge developed?
- What has cognitive psychology taught us about developing comprehension?
- What has been the impact of the cognitive-psychological perspective on reading in England?

Throughout the various sections, the practical implications for the classroom will be integrated into the discussion and references will be made to our scholars' suggestions. There are also separate sections on key aspects of practice.

Cognitive-psychological concerns about the psycho-linguistic stance

As we saw, wholeness, authentic language, meaning and reader response are the hallmarks of the psycho-linguistic view. It is one that involves both text and context. Frank Smith, in particular, contended that context cues played the major role in comprehending text. Moreover, its philosophical principles of empowering learners, of positioning the learners as agents of their own learning and of the status attributed to the learners' responses to literature all contributed to a child-initiated and interest-initiated (as opposed to teacher-centred) pedagogy, and to some considerable resistance to teacher-driven or objectives-led curricula and to direct teaching or skills reinforcement. All of this was criticized within cognitive psychology as operating on assumptions that empirical evidence did not support. In other words, as far as some cognitive psychologists were concerned, it lacked scientific backing.

Reading acquisition as stage or non-stage?

One of the major areas of debate in reading has been about whether children progress through reading stages or whether the reading process is essentially the same for the experienced and the novice reader. This is a point that often distinguishes those taking a strong cognitive-psychological perspective from those adhering to a psycho-linguistic stance. Drawing on the work of Juel (1991), the difference between those two positions, in relation to stage or non-stage, can be conveniently summarized in a table as follows:

Table 1 Stage and non-stage models of reading development

<i>Stage model (cognitive-psychological)</i>	<i>Non-stage model (psycho-linguistic)</i>
There are qualitative differences between experienced and beginner readers. Readers go through different stages which are characterized by the addition of more efficient ways of identifying words.	Reading process is the same for all readers, regardless of reading experience, but there are differences in the control readers have over the processes, that is how they use the cues available to them.
There are differences in the processes readers go through, not just differences in the control that readers can exert over the processes.	These differences are quantitative, not qualitative. They depend on quantitative growth about knowledge of language (syntax) and the world (meaning).
Word identification is the key to comprehension. And knowledge of orthography is more important in that essential task than syntactic or semantic knowledge.	Reading is more dependent on knowledge of the world and of language context than it is of knowledge of the printed word i.e. orthographic knowledge is less important.
Maximal orthographic information is used. The efficient use of orthographic knowledge leads to better comprehension.	Minimal orthographic information is used.

Source: Morris *et al.* (1996)

Non-stage models emphasize the importance of oral reading and minimize the role of decoding skill in learning to read. For those proponents reading material should be rich in meaning and language quality. The stage proponents, on the other hand, attribute priority to early learning of spelling-sound correspondences. Therefore they emphasize texts that have some degree of controlled vocabulary in order to make the alphabetic system as explicit as possible. Cognitive-psychologists view the understanding of the

alphabetic nature of written language as key and that is considered the major hurdle for the beginner reader. It's important to emphasize though that both schools of thought view reading as a search for meaning and as a goal-directed activity. They agree on the destination, so to speak, but disagree on the journey to that destination.

There are several stage models in the cognitive-psychological literature (e.g. Gough and Hillinger 1980; Chall 1983; Frith 1985; Ehri 1987; Ehri and Wilce 1987) and, although they all differ in some minor respects, they are essentially the same in relation to one important aspect. That is, they all accord huge importance to decoding or deciphering words. On this there is undoubted consensus. Moreover, stage models demonstrate that over time the child does actually learn to read in qualitatively different ways. Because of the scale of the consensus regarding both the significance of deciphering words and the staged process of reading acquisition, I have decided that it is not necessary to discuss the minor differences in the various stage models here, fascinating though these are in some respects. This is because my main concern is to demonstrate the contribution that the cognitive-psychologists made to our understanding of the reading process and to enhance appreciation of the theoretical perspectives that our scholars bring to bear on their suggestions for reading development in the classroom.

A stage theory of reading acquisition and how to progress to the next stage

It is, however, appropriate to discuss just one of the stage models as illustrative of the field. Henrietta Dombey (Part Three) and Laura Huxford both referred to at least one stage theory in their discussion of the theory informing their suggestions for Stephen. I will take the work of Linnea Ehri and, to a lesser extent, that of Marilyn Jager Adams as an example, not least because Laura Huxford's account of what Stephen's teacher might do to support him is heavily influenced by their work. Laura refers to both Ehri and Adams as having influenced her thinking. David Wray also talked about the importance of the work of Adams.

What Ehri found so mysterious is the way readers are able to look at a word and immediately get its meaning without any effort at decoding the word. Just sight of the word triggers immediate recognition. How do beginner readers then acquire the ability to recognize words rapidly and automatically? How is it that readers are able to store and remember new words easily after very few encounters with those same words? Ehri spent over two decades researching these questions or variations of them.

Sight word reading, she argues, is used the most because it is fast and automatic. In using the term sight word reading, Ehri is clearly referring to the processes that learners acquire as they learn to read. She dispels some

common misconceptions about sight reading. One is that only irregularly spelled words are read by sight. Instead she emphasizes that all words, including those that are easily decoded, become sight words once they have been read several times. Second, her work (and that of other 'stage' theorists) suggests that, contrary to popular belief, sight word reading is not a flashcard method of teaching reading, but rather a process of reading words by accessing them in memory. However, teachers will be familiar with the use of 'sight word' as a teaching method whereby sight words are understood to mean the high-frequency, irregularly spelled words pupils are taught to read as unanalysed wholes, often on flash cards (e.g. 'once', 'their', 'come'). And third, she dispels the notion that sight word reading involves memorizing the visual features of words like their shapes and that it has nothing to do with letter-sound correspondence. She strongly rejects this, saying 'Mature forms of sight word learning are alphabetic and phonological at root' (Ehri 1995: 117).

The key to sight word reading, Ehri discovered, is a process she termed *connection forming*. Connections are created, she says, that link the written forms of words to their sounds and meanings and these connections are stored in the reader's word memory (or lexicon). The stage aspect of her theory derives from her further discovery that different types of connections predominate at different points in development. The notion of *connectionism* is common among stage-reading theorists (e.g. Stanovich 1992). Ehri's thinking is that advances in reading ability occur as new processes or strategies for word identification are used by the reader.

It is interesting that in so many of her writings (e.g. 1991, 1994, 1995, 1999) Ehri begins by noting that there are many ways to read words other than by sight but she says these ways are only used in the case of words not known by sight. One way, other than sight reading, is decoding or phonological recoding. This refers to the process of transforming graphemes into phonemes and then blending the phonemes into pronunciations. Another way is reading by analogy and this refers to the process of using known sight words to read unknown words that share letters, e.g. recognizing 'plant' by analogy to 'plant'. In this she is drawing on the research, now very familiar to teachers in Britain, of Bryant and Goswami. Yet another way is reading by predicting which refers to the process of generating sensible guesses about words based on context cues or on initial letters or both. In this of course she is clearly drawing on the insights made available by Goodman and others of the psycho-linguistic school.

Pre-alphabet phase

Because of its significance in all the stages of reading acquisition, Ehri uses the word 'alphabet' in her labels for the four stages she theorizes that children

go through as they learn to recognize words by sight. The first phase, the pre-alphabet phase, describes a time when the learner stores in memory connections between selected visual cues and words. Such cues might be single visual cues to remember the word, like a thumbnail appearing next to a word as revealed in one study (Gough and Juel 1991), or the location of the word on the page, or the shape of two round eyes in the word 'look'. Letter-sound connections are not involved at this stage. When children in this phase recognize print in their environment such as fast food restaurant signs, they do so by remembering the visual cues that go along with the print rather than the actual words themselves (Ehri 1994). Children connect to the meaning or the idea and not the actual word, so frequently they offer variable rather than precise wordings – semantically appropriate substitutions. The child is minimally dependent on graphic information at this stage and maximally dependent on context information.

At this stage what's important is that the beginner reader has lots of quality literacy experiences in order to appreciate print's communicative function. Essential would be the opportunity to listen to stories, the opportunity to see print being used for meaningful purposes, for example dictating a story or a message while the teacher writes it down, reading and writing greeting cards etc. (Suizby and Teale 1991). Other suitable classroom activities to expose the child to print at this stage might include drawing the child's attention to print in the environment; labelling of classroom objects; and use of big books where they can see, and perhaps follow, the print as the teacher reads.

Partial alphabetic phase

Once learners acquire some knowledge of the alphabet system, however, sight word reading shifts into a partial alphabetic phase. Now connections are made between letters in written words and sounds in the pronunciation of those words. 'Partial' is used to describe this stage because the learner attends only to the most salient letters – usually the most salient letters are the first and final ones of the word. To remember sight words by this means, learners need to know the relevant letter-sound correspondences and they need to be able to segment initial and final sounds in words. To move pupils on from the first to the second phase, it seems they should be helped to notice shared sounds in words, to segment initial sounds in the pronunciation of words, and to recognize that letters symbolize initial sounds in words.

Phonemic awareness is necessary at this stage. Because of the significance of phonemic awareness in the development of early reading and because of the unique contribution that cognitive-psychology contributed to our understanding of this phenomenon, a later section is devoted to its development.

Phonic knowledge is also important for this stage and I will also discuss that more fully later.

A good way to progress children who are at this stage would be to balance the emphasis on sense making and the development of alphabetic knowledge while at the same time encouraging the child to use multiple cue sources. As a child is reading, Marie Clay (1989) suggested these four cue sources might be emphasized to good effect:

- 1 Sense and meaning: Does it make sense?
- 2 Visual cues: Does that look right?
- 3 Letters/sounds: What would you expect to see?
- 4 Structure, grammar: Can we say it that way?

The advantage of the partial alphabetic phase over the earlier stage is that it provides the beginning of a system to support memory. Knowing the alphabetic system greatly supports the task of noticing and remembering relevant connections between written words and their pronunciations.

Full alphabetic phase

Once learners get full knowledge of the alphabetic system, complete connections are formed between graphemes in spellings and phonemes in the sounds of words. The full alphabetic phase is reached when readers realize that most graphemes symbolize phonemes in the spelling system. Unknown words can now be identified by attending to all the graphic information. Unknown words can be read because the reader can now transform unfamiliar spellings of words into blended pronunciations.

The early part of this stage is characterized by lots of sounding out and concentration on the letters. At the beginning of this stage, Chall (1983) suggests, the child may glue to print by which she means that the child's attention may be overtly directed to spelling-sound relationships. She also described it as grunting and groaning because children often hesitantly go through a text calling words aloud. Stahl (1997) describes this as fixed on print. In my view this is exactly where Stephen is – he is placing great emphasis on accurate decoding of words. In general, the distinguishing feature of this stage is that spellings become bonded to pronunciations of words in memory.

One obvious advantage of representing sight words more completely is that word reading becomes much more precise (Elmi 1994). Learning to decode (or decipher) is vital for moving from rudimentary reading to reading large numbers of words.

Cunningham and Cunningham (1992) argue that invented spelling during writing has potential for developing children's orthographic knowledge. They suggest activities such as 'Making Words'. This is an activity

in which children are individually given some letters that they use to make words. Children make between 12 and 15 words, beginning with two-letter words and continuing to three-, four-, five-, six-, seven-letter or longer until the final word is made. The final word includes all the letters they have that day and children are usually keen to figure out what word can be made from all the letters. 'Making Words' is an active, hands-on, manipulative activity in which children discover sound-letter relationships and begin to see patterns in words. They also learn that changing just one letter or a sequence of letters changes the whole word.

Another strategy that could be used for readers in this and the earlier phase was developed, tested and found effective by Gaskins *et al.* (1996/97). The Benchmark Word Identification (BWI) Program sought to enable pupils to use key words to decode unknown words. This is how they went about achieving this. They selected about 100 words for pupils to analyse during the school year, chosen according to key criteria. The words contained spelling patterns that are frequent in English and that cropped up frequently in children's books. They contained the full variety of initial consonants, digraphs, and blends that beginning readers would encounter in their books. For example, the word 'truck' was picked to represent the letter pattern '-ck' and the 'tr' blend. They then taught three or four key words per week using explicit teaching that included the following:

- stretching out the pronunciations of words to analyse constituent sounds in the words;
- analysing the visual forms of words;
- talking about matches between sounds and letters;
- noting similarities to sounds and letters in other words already learned;
- remembering how to spell the word.

All of these word analysis approaches were modelled to develop the pupils' metacognitive awareness and control over their word learning, and these word analysis approaches were applied as necessary as they read connected text with the familiar letter patterns. These texts were first read to pupils as they point and follow, then they were echoed and choral read. Finally the children read all or parts of the text on their own. The teachers discussed with pupils why they were learning words in this way. To quote how one teacher spoke to her class: 'We fully analyze words, because if we get into our heads every single letter for a word matched to every single sound, we will be able to get the word back out when we want to read it or write it again' (Gaskins *et al.* 1996/7: 250). The pupils were encouraged to become word detectives. Phonics rules were not taught, but pupils were encouraged and expected to generate and verbalize their discoveries about the make-up of words. Their induction processes about regularities of the spelling systems were guided and supported – they were not left to discover the spelling system on their own.

Consolidated alphabetic phase

Eventually the concentrated attention to the letters in words permits the learner to bypass such explicit use of spelling sound correspondences. As sight words accumulate in memory through repeated experience of reading a letter sequence that represents the same phoneme blend across different words, letter patterns recurring in different words become 'consolidated' into what Ehri calls 'multi-letter units symbolizing phonological blends' (1995: 117). Knowing, say, 'ing' as a consolidated unit makes the job of forming connections to learn the new words, 'coming', 'swimming', 'playing', 'interesting', 'exciting' etc. so much easier. Juel's research (1991) demonstrates that fluent readers only revert to previous stages when faced with a rare or foreign word and then they mimic the beginner reader at an earlier stage.

Larger letter units are valuable for sight word reading because they reduce the memory load involved (Ehri 1994). What seems to have happened at this consolidated alphabetic phase is that the application of spelling sound information becomes rapid and automatic and context-free. This is so because readers at this stage can use analogies, they can learn to read unknown words by applying their knowledge and memory of the composition of known words. It's no longer necessary to reflect on word recognition at this stage – the process of recognizing words has become automatic. And since the learners in this phase are now free from deliberate attention to word identification, they can devote their attention to meaning and the content that is read.

What the stage theorists, with their emphasis on connectionism, drive home to us is that, first, the recognition and comprehension of a word compete for the short-term memory capacity that is available; second, the more effort required to decode a word the less capacity there is to support comprehension; and third, it follows therefore that the more automatic the decoding process is, the better is the understanding of the word.

Another advantage of this phase is that the whole process is speeded up and, of course, when many words can be recognized automatically the learner is more likely to engage in wide reading. Stephen has not reached this stage since for him reading appears not yet to be an automatic process. It is effort-full, not effort-less. He has to dwell on every word, deliberating over it and searching for clues to work out what it might be.

The transition to automatic word recognition occurs over several years. More than a decade ago Marilyn Jager Adams (1990) reviewed the field of early reading and, on the basis of very many studies, concluded that as children are exposed to more and more words and as they devote more and more attention to their patterns, they build up a network (or, to use Ehri's word above, connections) of relations among letters. This mental network holds vital information about the order in which letters typically appear.

For example, we know some letters frequently appear together, and so when one letter is recognized, this primes other letters in the mental network. As an example, this is how Adams (1990: 109) describes how the word 'the' is perceived:

As the eye fixates on the word 'the', the letter recognition unit for the letter 't' receives direct, visual stimulation. In English, when the letter 't' occurs in the initial position of a three letter word, the next letter is extremely likely to be an 'h'. The strength of the associative link from the 't' to the 'h' should therefore be very strong and positive, resulting in considerable excitation of the 'h' unit. Thus as a consequence of the reader's having seen the initial 't', the 'h' unit reaches its own seeable level of excitation more quickly than had it been waiting on direct visual excitation alone.

Exposure to written words is so important according to the evidence reviewed by Adams. She speculates that the process of sounding out words draws attention to the orderings of individual letters, speeding up the formation of networks. Her research (and that of others) casts serious doubts on the role of context (e.g. picture cues) in reading. Indeed this body of research demonstrates that excessive use of context may hinder children's development of orthographic knowledge. We will return to the classroom implications of some of these ideas later.

The notion of reading as constrained reasoning

We are already familiar with the notion of reading as reasoning and problem-solving oriented, following Goodman's description of reading as a psycho-linguistic guessing game and the whole language theorists in general emphasizing context cues (i.e. semantic and syntactic cues); see Part One. Indeed, long before that, even as far back as 1917, Thorndike had argued that reading is best thought of as reasoning. In the light of the above account of sight reading and the work of those cognitive-psychological theorists who see reading acquisition occurring in stages and highly dependent on alphabetic knowledge, it is worth reconsidering the fit between these two apparently different perspectives. To what extent do you think reading is actually a problem-solving activity, a psycho-linguistic guessing game?

In this regard I think the notion of reading as constrained reasoning is extremely helpful. It is a notion developed by Stanovich a decade ago (1992) in reviewing the state of the cognitive-psychological evidence at the time, but one that has had little publicity especially in the reading literature in the UK. However, several writers have drawn on the ideas underlying this notion (e.g. Harrison 1992) and indeed several of our scholars drew on

Stanovich's work in justifying their observations of Stephen and their suggestions for his teacher, e.g. Ann Browne and Laura Flaxford.

To understand the notion of reading as constrained reasoning you must first appreciate and distinguish between two sub-processes of reading. One is the process by which a word activates its meaning in memory – or, to use the technical term, lexical access. Simply put, this is word recognition. The second is what happens after this process. This demarcation in turn neatly divides the reading process into parts that are 'like reasoning' and 'not like reasoning'. Lexical access in fluent readers, argues Stanovich, is not at all like reasoning or problem solving. He says this is a fast, obligatory, low capacity process largely uninfluenced by knowledge structures outside the lexicon or by higher-level cognitive expectations' (1992: 3). Post-lexical processes, or what happens after a word has been activated in memory, could be described as 'reasoning', he says, but even here the reasoning is limited or 'constrained' by the person's ability to activate the information associated with the word's orthographic, phonological and semantic representations in the first instance. If the word is not recognized quickly, then comprehension won't follow. This is so because comprehension requires the raw materials (working memory of the orthography) with which to operate efficiently.

Because comprehension of the text is limited by the outcome of lexical access, Stanovich says that reading is best seen as constrained reasoning. Such a conceptualization takes word recognition as 'the central subprocess of the complex act of reading' (Stanovich 1992: 4). Hence my title for this section of the book. Throughout his writings Stanovich (1991, 1992, 1995) constantly emphasizes that, although word recognition is central to reading, the ultimate purpose of reading is, of course, comprehension. He says 'Efficient word recognition seems to be a necessary but not sufficient condition for good comprehension . . .' (1992: 4). It is highly unlikely, he suggests, that excellent reading comprehension will coexist with deficient word recognition skills. Word recognition is a prerequisite to comprehension.

Cognitive-psychological message: the word is important

You will remember that the psycho-linguistic perspective on reading, described in Part One, ascribed great significance to context cues, and some theorists (e.g. Frank Smith) argued that visual information in text is sampled by the reader and is not necessarily of primary importance. Their perspective on reading is often described as 'top-down' because of the emphasis on context, on meaning, on the whole text, on response to text, on what the reader brings to the text in terms of expectations and prior knowledge etc. The constructivist metaphor was strong: the notion of the reader as constructing meaning was all-important.

The research discussed here so far together with other experimental psychological research using eye-movement technologies has demonstrated that readers do in fact attend closely to visual information. (These latter studies take a picture of how the eye moves and what it fixes on during reading.) Readers do not sample the text in quite the way that 'top-down' theorists had previously assumed. There are many studies published now that convincingly demonstrate that visual features of the text are not minimally sampled in order to confirm hypotheses, but instead are exhaustively processed, even when the word is highly predictable (Stanovich 1992). This suggests a 'bottom-up' approach. Moreover, these same studies demonstrate that learning the cipher is neither easy nor natural, thus suggesting that children need support in learning it and that they benefit from explicit and some systematic teaching.

Poor readers, in contrast to fluent readers, make the greatest use of context cues – they are forced to rely on context cues since they haven't the necessary word recognition skills. This finding also contradicts Smith's thinking as he had argued that fluent readers paid more attention to context. There is little evidence that the difference between good and poor readers lies in good readers' better use of context cues. Juel (1991) notes that there is in fact an upper limit to improvement in the use of context information. She says that 'at best skilled readers can accurately predict one quarter of the words in context and these are frequently function words which are of such high frequency anyway that context is rarely needed to recognise them' (Juel 1991: 774). Function words are usually forms of 'to be', articles and prepositions. On the other hand, content words (i.e. nouns, adjectives and verbs, those words that really carry the meaning) are predictable in running text only about 10 per cent of the time. These words then are the least accurately predicted and they require the most decoding skill.

The outcome of all this work is that models of reading acquisition, have, over the past fifteen years or so, shifted away from 'top-down' assumptions and towards models that emphasize autonomous processing through connection making. In turn this has meant a tempering of the constructivist metaphor where the reader builds or constructs meaning and it has raised awareness of how the text itself constrains expectations and beliefs (Perfetti and McCutchen 1987; Stanovich 1991, 1992). Stanovich (1992) summarizes this shift by saying that it is increasingly recognized that strong constructivist assumptions do not square with what is now known about the effect of context on word recognition, that is, word recognition is less affected by context as reading skill develops.

While I think Stanovich's notion of reading as constrained reasoning, noted above, is helpful, intriguing and insightful, I am left with some unease in relation to his tendency to undermine, if not reject, the notion of reading as a meaning-building activity. And here I think it is useful to consider briefly the idea of 'big shapes' and 'little shapes' originated by

Myra Barrs at the Centre for Language in Primary Education (CLPE) in London and endorsed so strongly by Teresa Grainger and Henrietta Dombey in their interpretation of Stephen's reading.

Big shapes and little shapes

Teresa Grainger referred in some detail to the idea of 'big' and 'little shapes', recommending specifically that Stephen be given much more support in relation to the former. Drawing on the work of Anne Bussis *et al.* (1985) and Margaret Moustafa (1993, 1997), who see reading primarily as meaning-driven, Myra Barrs (Dombey *et al.* 1998) develops the idea of 'big shapes' and 'little shapes'. 'Big shapes' refers to the large-scale cueing systems that the learner draws on when making sense of print. This includes syntax and semantics as well as such large-scale structures as genres. 'Little shapes' refers to the small-scale cueing system of letters and sounds as well as other cues like spelling and punctuation, in other words, what is happening at the level of print. She and her colleagues describe reading as a 'multi-level process in which the reader attends both to the big shapes and the small shapes, confirming at each of these levels hypotheses that have been set up at the other' (Dombey *et al.* 1998: 2). The big shapes, she says, always have to come first since they are linked so closely with the meanings of texts. She and her colleagues see the 'little shapes' fitting inside the bigger ones, and, crucially, as best learned 'within the context of a familiar and supportive text, where other cueing systems help children learn to use the least familiar ones – the graphophonic cueing system, or the print' (1998: 2). Children have to orchestrate these different kinds of information as they learn to read.

So at this point you might well ask the question: who is right, the psycho-linguists who insist that reading is a 'top-down' process or the cognitive-psychologists, most of whom tend to see reading more as a 'bottom-up' process?

Top-down or bottom-up?

The use of context is important in reading, as the psycho-linguistic school demonstrated. Without context knowledge, readers would not be able to work out the relevant meaning of words nor would they be able to draw inferences about the text. But where they are less accurate is in relation to the use of context in the identification of words. Skilled readers do not use context cues much to identify words but they do use context to interpret words and sentences. Context is used for higher level processes of meaning interpretation rather than for word identification (Perfetti 1995). As already

noted above, less skilled readers, by contrast, use context to identify words because they are not skilled enough to use word identification skills. The evidence from the cognitive-psychological literature shows that when *bottom-up* processes that result in word recognition are deficient, the learner compensates by relying more heavily on contextual information.

Marilyn Jager Adams's evidence (1990) is often cited to support 'bottom-up' teaching, and specifically phonics. Yet, in her seminal text *Beginning to Read* (1990: 421–2), she warns of the dangers of 'bottom-up' teaching. Referring to good quality programmes for the development of reading she observes:

... good programs [do not] succumb to the simplistic hypotheses that letter-sound relations are the most basic of reading skills. Rather, with respect to the knowledge that is critical to reading, that which can be developed through phonic instruction represents neither the top nor the bottom, but only a realm in between. Before children will learn to read, they must learn to recognize individual letters. They must become aware of the structure of language, from sentences and words to phonemes. And, most important, they must develop a basic understanding of the forms and functions of text and its personal value to their own lives.

Finally, none of these programs embodies the misguided hypothesis that reading skills are best developed from the bottom up. In the reading situation, as in any effective communication situation, the message or text provides but one of the critical sources of information. The rest must come from the reader's own prior knowledge. Further, in the reading situation as in any other learning situation, the learnability of a pattern depends critically on the prior knowledge and higher order relationships that it evokes. In both fluent reading and its acquisition, the reader's knowledge must be aroused interactively and in parallel. Neither understanding nor learning can proceed hierarchically from the bottom up. Phonological awareness, letter recognition facility, familiarity with letter patterns, spelling-sound relationships, and individual words must be developed in concert with real reading and real writing and with deliberate reflection on the forms, functions, and meanings of texts.

It should be clear by now that the answer to the question in the title of this section is that both are right, but that the whole-language theorists did not sufficiently recognize the importance of word recognition. The pedagogical issue for teachers is how to balance learning the cipher or the code and reading for purposes that are authentic for the learner i.e. for enjoyment, for finding out, etc. The psycho-linguistic school certainly raised our appreciation for the latter and the cognitive-psychological school undoubtedly raised our appreciation for the former.

Connie Juel (1991, 1999) offers helpful suggestions on how to deal with the tension between learning the code and reading for authentic purposes. The former requires building up the learner's spelling-sound knowledge with reading material that makes the alphabet system transparent and this suggests controlling the vocabulary that the child is exposed to. The latter, on the other hand, requires exposure to texts that are rich in vocabulary and meaningful in content. Juel (1999: 209) says 'it is wrong to abandon controlled vocabulary texts on the assumption that reading is a psycholinguistic guessing game'. The question, therefore, is: how can we create controlled texts without making them so limited in vocabulary that they appear dull like example 2 on page 50? Juel offers two suggestions.

First, she suggests, the teacher might introduce together multiple letters that often correspond to the same sound (for example, the long *e* pattern in 'me', 'sea', 'see', 'neat', 'green', and 'Pete'). She suggests simultaneous teaching of different sounds of the same letters (e.g. 'how', 'bow') which will also promote a more varied initial vocabulary for stories. She cites evidence to show that concurrent teaching of two sounds for a single letter fosters better learning than the successive teaching of the two sounds. Second, she suggests that not all the words in a story need to be decodable exclusively on the basis of what has been taught in phonics. She recommends the addition of high-frequency words to the phonic texts and the use of patterned text and nursery rhymes. Well-known or very familiar texts can be read, she suggests, while drawing attention to the words that exemplify the spelling-sound pattern of the day.

Juel's own research suggests that a little phonic instruction goes a long way, especially when the books the children are exposed to contain a number of decodable words that can facilitate implicit learning. The message from Juel's vast amount of evidence is that, while phonics training is very important, the training should be focused and short-lived.

Elfrida Hiebert (1994), on the basis of several school-based projects involving pupils who depended to varying degrees on the school to become literate, goes further than Juel in arguing the case for balance across 'top-down' and 'bottom-up' perspectives. Her research demonstrates the need for using both approaches. She summarizes her findings as follows:

Authentic literacy tasks can assist students in responding to and interpreting text in ways that build on their existing knowledge and extend to worlds beyond the classroom. These tasks can be created so that students take ownership of literacy and schooling, not just of individual texts. Students whose previous literacy experiences have emulated school literacy tasks thrive in these contexts. Authentic literacy tasks also allow students without extensive literacy experiences to participate more fully in literacy events. But, without contexts where teachers consistently model and guide, the students who depend on

schools to become literate don't necessarily or automatically attain high levels of literacy as a result of authentic tasks. However, when authentic literacy tasks include guidance, most first-grade students who begin with little school-like literacy can become proficient readers and writers.

(Hiebert 1994: 404-5)

Over the nineties several researchers (e.g. Trachtenburg 1990; Spiegel 1992; Moustafa 1993, 1997) have demonstrated that teachers can and do combine both perspectives. How do you interpret the position adopted by our literacy experts on this topic? It seems to me that not one of them rejects the significance of attending to word recognition. Differences lie perhaps in the relative emphasis they place on word recognition with Laura Huxford tending to accord greatest priority to this aspect of reading. Later in this Part we will consider the extent to which the National Literacy Strategy reflects the thinking of the cognitive-psychological school. But now we will briefly revisit some of our scholars' suggestions for promoting Stephen's word recognition skill.

Teaching word recognition: Stephen and children like him

The cognitive-psychological perspective on reading is one in which word recognition is central, as reflected in the title of this Part of the book. It is noteworthy that most of our experts referred to Stephen's need in this regard. Although the emphasis they accorded overall to this varied, none could be said to neglect its importance. Ann Browne referred to the need to 'enlarge his sight vocabulary' and she suggested games like lotto, snap and computer games for doing this. This was echoed by Teresa Grainger. Both scholars also suggested writing should be integrated with reading so in writing sessions Stephen's attention should be drawn to patterns in words. Laura Huxford talked about the importance of 'orchestrating strategies' or helping him harmonize all the various reading cueing systems in reading, and how Stephen hadn't yet mastered this ability. Although he may have some skill in using word-building strategies like analogies, Laura said he didn't have an effective strategy for tackling long words, noting that he didn't know the vowel digraphs (except perhaps 'ee'). She would encourage his teacher to be very explicit in developing his word recognition skills. For example, she said the teacher could get him to talk about how he figured out an unknown word. She mentioned sounding out the parts of the word. David Wray said how if he were Stephen's teacher he would devise 'games and activities' to help him with blending. Hennessey Dombey, whose perspective we discuss further in Part Three, talked about helping Stephen to notice the morphemic and phonemic patterns in words. A

morpheme is a root word, the basic part of a word to which affixes (prefixes and suffixes) are added, while a phoneme is the smallest element of sound that makes a difference to the meaning of a word. She also recommended the use of displays of word families.

To apply the recommendations of our scholars and the research discussed in this part of the book more broadly, i.e. to other children like Stephen, you would have to get a good sense of the child's word recognition along a continuum of written word knowledge, for example beginning consonants, word families, vowel patterns, multisyllable words. Then over time you would need to provide some systematic word study and find ways of applying this word study in meaningful contexts. Below are some principles and procedures from the work of Morris *et al.* (1998) which are probably familiar to teachers but which, nevertheless, have proved to be effective with struggling readers, and specifically with readers who have difficulty decoding.

- Determine the child's reading instructional level, that is the level where he is challenged but not frustrated.
- Find reading material that is of personal interest and significance to him.
- Foreground comprehension by informally discussing stories or articles as they are being read.
- Establish the child's word recognition: check for knowledge of and ability to apply beginning consonants, word families, vowel patterns, multisyllable words.
- Try out ways of getting him to practise reading on his own.

Four activities might feature strongly in such a child's literacy diet – Guided Reading, Word Study, Writing and Easy Reading. Guided Reading might involve you or a trained classroom assistant or parent helper and the child in reading alternate pages of a suitable text, stopping occasionally to check comprehension. After a few pages of this partner reading, the helper could ask the child to predict some aspect of the plot and then ask him to read silently the remaining three or four pages of the story. Encourage him to ask for help with difficult words. He could perhaps take the next chapter or several pages home on audiotape. This time his job is not just to listen to the recorded chapter but to practise reading it in preparation for an oral reading the next day, during which time the plot would also be discussed. Depending on the size of the book, the next section or chapter could be partner read and a tape of the next one taken home.

Every day have the child spend some time, say ten minutes, in word study. Table 2 offers an example of sorting vowel patterns.

But as indicated above in the description of the stages of reading development, there are several ways to decode words and the teacher needs to develop and be mindful of all of them. Five word identification strategies are summarized in Table 3.

Table 2 Word sort example

<i>nut</i>	<i>take</i>	<i>card</i>	(?)
<i>fan</i>	<i>made</i>	<i>park</i>	<i>fall</i>
<i>bag</i>	<i>face</i>	<i>far</i>	<i>ball</i>
<i>flat</i>	<i>name</i>	<i>dart</i>	

Source: Morris *et al.* (1996)

Table 3 Word identification strategies

Strategy	Description
Phonics	<ul style="list-style-type: none"> • Pupils use their knowledge of sound symbol correspondences and spelling patterns to decode words when reading and spelling.
Analogies	<ul style="list-style-type: none"> • Pupils use their knowledge of rhyming words to deduce the pronunciation or spelling of an unfamiliar word e.g. 'creep' from 'sheep'.
Context, semantic and syntactic cues	<ul style="list-style-type: none"> • They use information from illustrations, from their prior knowledge of the subject matter and of the way language works.
Morphemic analysis	<ul style="list-style-type: none"> • Pupils apply their knowledge of root words and affixes (prefixes at the beginning and suffixes at the end) to identify unfamiliar words. They 'shed' any prefixes and suffixes and identify the root word first. Then they add the affixes e.g. 'trans-port', 'bi-cycle', 'tele-scope', 'centi-pede'.
Syllabic analysis	<ul style="list-style-type: none"> • Pupils break multisyllabic words into syllables and then use phonics and analogies to decode the word, syllable by syllable e.g. 'cut-prit', 'ten-por-ar-y', 'vic-tor-y', 'neg-a-tive'.

Source: Tompkins (1997: 169)

Writing might involve the child in selecting his own writing topics and expression of ideas should be prioritized over mechanical accuracy especially in the early weeks of focused teaching, and always in first drafts. Easy Reading could be part of everyday work in which he and a helper would start a story in school and he could finish the story at home.

Some teachers of the middle years of primary school notice that their pupils make little progress or actually lose ground in their reading development.

Some have argued that this is due to the increased demands of the curriculum, especially the unfamiliar vocabulary of informational books. However, more recent research along the lines outlined above (e.g. Chall *et al.* 1990) suggests that inadequate teaching of word identification strategies may be responsible. The problem is that for pupils like Stephen, practice in the context of repeated readings of predictable texts may not be enough. Some children simply do not notice individual words and teachers need to be more explicit in these cases.

They need Shared Reading plus. They need shared reading experience where the teacher reads a big book with pupils using a class set of books. The teacher models, i.e. reads aloud, while they follow along in their individual copies. Essential for children like Stephen are also both of the following: focusing on target words and using the target words in reading and writing activities. The teacher chooses one or more words from the class word wall for study. Having highlighting this word, teacher and pupil identify and list words with the same phonogram i.e. spelling pattern. Pupils write the words and/or add them to personal word banks/booklets. Pupils are also encouraged to notice the target words in books they read and report to the teacher when they notice the word. They use the target words in word posters and in books they write.

Since phonics is such key word identification strategy and since it is a topic that is controversial in reading debates, the next section deals with this in some detail.

Phonological awareness and phonic knowledge

Phonological awareness is probably one of the most significant developments in our understanding of the reading process in the past fifteen years. As one psychologist put it, 'Although phonological processing is not the only place to look for answers to the mysteries inherent in reading acquisition, it has been one of the most productive areas of inquiry to date in terms of advancing our scientific understanding of the reading process' (Blachman 2000: 495). Credit is due to cognitive psychologists for furnishing us with this understanding. In view of its importance, I will address three questions in this section. First, what is phonological awareness and how is it assessed? Second, why is this awareness important? And third, how can it and phonic knowledge be developed in the classroom?

What is phonological awareness and how is it assessed?

Simply put, phonological awareness is a general awareness of sounds in speech as distinct from their meanings. When that awareness includes an

understanding that words can be divided into sequences of phonemes, this sensitivity is termed phonemic awareness. A phoneme is the smallest element of sound that makes a difference to the meaning of a word (Dombey *et al.* 1998). 'Cat' has three phonemes, /c/a/t/, and 'ship' also has three, /sh/i/p/. Phonemic awareness is the insight that every spoken word can be thought of as a string of phonemes. Because phonemes are the units of sound that are symbolized by the letters of the alphabet, an awareness of phonemes is important to understanding the alphabetic system, and therefore to the learning of phonics and spelling.

Phonemic awareness develops through other, less subtle levels of phonological awareness like noticing similarities between words in their sounds, enjoying rhymes and counting syllables. Spoken words can be phonologically subdivided at several different levels of analysis. These include the *syllable* (the word 'predict' has two syllables: /pre/ and /dict/); the *onset and rime* within the syllable (/pr/ and /e/, and /d/ and /ict/, respectively); and the individual *phonemes* themselves (/p/, /r/, /e/, /d/, /i/, /k/, and /t/) (Snow *et al.* 1998). The work of Goswami and Bryant (1990) highlighted the significance of the unit just below the level of the syllable i.e. the rime. The onset is the part of the syllable before the first vowel and the rime is the part of the syllable from the first vowel onwards.

The assessment of phonemic awareness involves tasks that require the child to isolate and segment one or more of the phonemes of a spoken word, to blend or build up a string of separate phonemes into a word, or to manipulate the phonemes within a word in some way, for example removing, adding or rearranging phonemes in one word to make another one. This is how a recent study, commissioned by the US Congress (Ehri *et al.* 2001), described how this kind of sensitivity could be assessed:

- *Phoneme isolation*, which requires the recognition of individual sounds in words, for example, 'Tell me the first sound in paste' (/p/)
- *Phoneme identity*, which requires the recognition of the common sound in different words, for example, 'Tell me the sound that is the same in bike, boy, and bell'. (/b/)
- *Phoneme categorization*, which requires recognizing the word with the odd sound in a sequence of three or four words, for example, 'Which word does not belong? "Bus", "bun", "tug"?'. ('tug')
- *Phoneme blending*, which requires listening to a sequence of separately spoken sounds and combining them to form a recognizable word, for example, 'What word is /s/ /k/ /u/ /l/?' (school)
- *Phoneme segmentation*, which requires breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a marker for each sound, for example, 'How many phonemes in ship?' (3: /sh/ /i/ /p/)

- *Phoneme deletion*, which involves recognizing what word remains when a specified phoneme is removed, for example, 'What is smile without the /s/?' (mille)

Why is phonological awareness important?

Research has now well established that phonological awareness is important in learning to read (Adams 1990; Blachman 2000; NRP 2000). It is both a precursor to and a consequence of reading. The most recent and systematic review of the evidence concluded that phonemic awareness is one of the best predictors of how well children will learn to read (Ehri *et al.* 2001). One example of the many studies reviewed in this project was one by Share *et al.* in 1984. Share and colleagues assessed pre-schoolers on several measures when they entered school – they took measures on each of the following: phonemic segmentation, letter name knowledge, memory of sentences, vocabulary, father's occupational status, parental reports of reading to children, and TV watching. They wanted to know which of these measures best predicted how well the children would be reading one and two years later. For each year in school, phonemic awareness was the top predictor along with letter knowledge.

Although not every child needs an explicit programme in phonological awareness, the reading teacher needs to know why such teaching is important as well as how and when to provide it.

How does phonemic awareness contribute to helping children learn to read? First of all, as already noted, the English writing system is alphabetic and it is not a simple matter to figure out that system. The thing is that words have prescribed spellings that are made up of graphemes symbolizing phonemes in predictable ways. The ability to distinguish the phonemes in the sounds of words so that they can be matched to graphemes is the key. And of course there are no breaks in speech which would indicate where one phoneme ends and the next one begins, thus accounting for the difficulty in doing this. Discovering phonemic units in speech is greatly facilitated, however, by some explicit teaching in how the system works – that is the conclusion of the recent review of the evidence (see National Reading Panel website (NRP 2000) for details as well as Ehri *et al.* 2000).

Understanding the alphabetic system requires an awareness that spoken language can be analysed into sequences of separable words and words, in turn, into sequences of syllables and phonemes within syllables. In other words all children need to learn about the segmental nature of print and how the sound segments are represented in print. Decoding words requires blending skill to transform graphemes into recognizable words. Reading words by analogy (e.g. recognizing 'camp' from knowing how to read 'lamp') requires onset-time segmentation and blending skill. Also reading

words by sight requires phonemic segmentation skill. As we saw above in relation to the final stage of reading, to store sight words in memory, children have to connect up graphemes to phonemes in the word and then retain these connections in memory (Ehri *et al.* 2001).

Although very many children seem to make these discoveries effortlessly on their own by listening to nursery rhymes, by playing oral language games and by having opportunities to write, very many other children do not seem to acquire such knowledge and skill automatically. It is likely that some children come to school having attained the prerequisite skills of reading, having had sufficient exposure to language and literacy play to trigger these associations or mental networks (Blachman 2000). It is also likely that, despite exposure to language games and all sorts of literacy experiences, other children remain phonologically insensitive.

Some explicit teaching is probably necessary for such children although again it is likely that a small amount of phonemic training goes a long way. Steven Stahl gives a fascinating account of one child, Heather, who was having difficulty learning to read in school. As part of her assessment, Stahl gave Heather a task which required her to remove a phoneme from a spoken word. He asked her to say 'meat', which she did. He then asked her to repeat it without the /m/ sound ('eat'). She said 'chicken'. Stahl was rather surprised at this. Then he asked her to say *coat* which she did, and then to try saying it without the /k/ sound. She said 'jacket'. As he studied her responses to several such tasks, he worked out that she responded to words only in terms of their meanings, and not as entities to be manipulated in themselves. For her, a little less of 'meat' was 'chicken' and a little less than 'coat' was 'jacket'. For most communication, focusing on meaning is necessary but for learning to read it is desirable to view words in terms of the sounds they contain (phonemic awareness) and in terms of their sound-symbol relationships (phonics knowledge).

Issues in the development of phonological awareness in the classroom

Before discussing how phonemic awareness might be developed in the classroom it is worth pointing out some issues involved in its teaching. Some of these issues have only very recently come to light and derive from the research of the National Reading Panel in the US.

Children who were taught only one or two phonemic awareness skills, e.g. segmenting words into phonemes, or segmenting and blending phonemes, showed stronger phonemic awareness and more strongly transferred to reading than children who were taught three or more skills.

I think this is a fascinating finding as it suggests that, as we hinted earlier, a small amount of teaching of phonemic awareness goes a long way. The

researchers tried to explain this finding and they offered some interesting explanations. One suggestion they offered is that when only one or two skills were taught, more pupils actually mastered the skills that were taught. Another possibility they speculated on makes a good deal of sense to me. They suggested that teaching multiple skills (more than three in this case) impaired the acquisition of phonemic insight as children may have become confused about the underlying principle as they moved from one skill to the next, first breaking words into sounds, then blending sounds into words, then taking sounds out of words to say new words. In the light of this possibility, the research team sensibly advises teachers, who are using multiple skills programmes, to teach one skill at a time and to ensure this skill is mastered before moving on to the next one. Crucially, in my view, they also add that teachers should teach pupils how each skill can be applied in reading as soon as it is taught.

They also suggest that what is more important than the number of phonemic skills to teach is the issue of which skills to teach. Phonemic instruction should be appropriate for a child's level of literacy development. The work done with pre-schoolers for example should be much simpler than the kinds of manipulations done with older pupils. Drawing on the research of several other authors the National Reading Panel listed phonemic tasks in order, from easy to difficult:

- 1 First sound comparison: identifying the names of pictures, beginning with the same sound.
- 2 Blending onset-rime units into real words.
- 3 Blending phonemes into real words.
- 4 Deleting a phoneme and saying the word that remains.
- 5 Segmenting words into phonemes.
- 6 Blending phonemes into non-words.

The work of Goswami and Bryant had already established that children find it easier to recognize onsets and rimes than to recognize phonemes. Moreover, those children who could do this at 4 years of age learned to recognize words more quickly over the next few years than their counterparts who did not have this skill at 4 years of age. In addition, they found that those who could not recognize such patterns could quite easily be helped to do so through nursery rhymes, play with language, using alliteration and rhyme, games like *I spy* and so on.

By teaching children to link this knowledge of sound patterns with letter patterns and by helping them notice the internal structure of words, they learned to draw analogies based on these patterns between words they knew and words they did not know. Their research suggested that while children actually begin reading using only a visual approach to recognizing words, their awareness of onset and rime allows them to apply analogies in order to recognize new words. In the early stages of course they benefit

from having those analogies pointed out to them. So children recognize new words, not so much by breaking down words or even building up words from their knowledge of phoneme-grapheme relationships, but by making analogies. Herein lies a self-teaching process that stands the beginner reader in good stead for future reading.

In deciding which aspect to teach or which approach to use, you have to take account not only of the difficulty of the task but also how your pupils are expected to apply that skill. In teaching the first of these above, for example, the intention is to alert children to the fact that words have sounds as well as meanings. The reason for teaching the second is to help beginner readers generate more complete spellings of words. And the reason for teaching phonemic blending is to help them combine letter sounds to decode words. As the research team make clear, teaching phonemic awareness effectively includes teaching the applications as well as the skill.

It is not possible to say how much time or how long teaching in phonemic awareness should last in order to be effective. Obviously individual learners will differ in how much teaching they need to acquire phonemic awareness. This implies that it is important to tailor teaching to pupil need by working out who has and who has not acquired the skills being taught. Children who are still having difficulty should continue with further skill development in phonemic awareness while those who have already acquired the skills would benefit more from doing other reading and writing activities. The NRP tentatively advise that the most effective circumstances may be teaching one or two PA skills with letters, especially blending and segmenting, in small groups of struggling readers or preschoolers for 5 to 18 hours (Ehri *et al.* 2001).

At least one reading expert questions this implication of the Panel's pedagogical recommendation, saying that it is tantamount to endorsing systematic phonic teaching in the early years. He queries the implicit assumptions that more is better and that earlier is also better. He also challenges the Panel's evidence on the grounds that there may be other ways of promoting this awareness. James Cunningham (2001: 333) argues that

the burden of proof is with the Panel to show that research-based practices such as shared reading of books that play with sounds, writing with invented spelling, and teaching onsets using a variety of activities (key actions, students' names, and key foods or beverages) do not help most children develop the necessary phonemic awareness they need. Until this happens, the Panel's rush to standardization of how and when to best develop the essentials of phonemic awareness should be ignored or opposed.

My own understanding of early and more recent work of Usha Goswami (Goswami 1986, 2000; Goswami and Bryant 1990) on analogies in reading processes leads me to suspect that Cunningham's list of practices should

certainly be part of phonemic work with children. Goswami's recent work (2000) on the relationship between a child's phonological awareness and lexical development points to the importance of the quality of the child's linguistic environment from infancy. Factors such as the clarity and frequency of the speech of care-taking adults and the efficiency of the child's linguistic processing – and the latter, she says, could be affected by factors such as the frequency of ear infections in early childhood – might all play an important role.

The point of referring here to Cunningham's response to the review of the NRP is to highlight some of the contested areas even within what is, arguably, quite a narrow area of reading. The scientific evidence presented by the NRP is strong in relation to the significance of phonemic awareness in children's reading development. This, in my view, has been well demonstrated with plenty of irrefutable evidence. But Cunningham's questioning of the NRP's interpretation of the pedagogical extension of that evidence is fair and valid, I think, since here we are in more messy research territory. The pedagogical evidence is not conclusive.

Issues in phonics teaching

We have already distinguished phonemic awareness from phonic knowledge. Phonics teaching is a way of teaching reading that emphasizes the knowledge of letter-sound correspondences and the ability to apply this knowledge to reading and spelling. Phonics teaching is designed for beginner readers in the primary years and for children having difficulty in learning to read. On the basis of our earlier discussion, it should be clear that phonemic awareness needs to be in place before phonic training starts.

Systematic phonics

The review by the National Reading Panel revealed that systematic phonics teaching makes a bigger contribution to children's reading development than programmes involving incidental or no phonics instruction. Systematic phonics teaching helped beginner readers acquire the use of the alphabetic system to read and spell words in and out of text. In addition, it contributed substantially to pupils' growth in reading comprehension. And it exerts its greatest influence in the early years i.e. reception and Year 1.

However, phonics teaching failed to exert a significant impact on the reading skill of low-achieving readers above Year 2. Given our profile of Stephen, it is worth pondering the explanations offered for this finding. The Panel suggests that phonics teaching provided to low-achieving readers may not have been sufficiently intense but the studies available for their analysis were too few to be definitive and future research will have

to provide further evidence about the impact of phonics instruction on older learners. The existing evidence would suggest that a phonics route to decoding may not be the best approach for Stephen. The Panel concluded, 'There are many uncertainties surrounding the introduction of phonics instruction to children in upper grades who have already moved into reading' (NRP 2000: 2-114).

The Panel also suggests that perhaps the impact of phonics instruction could be enhanced by combining it with teaching that supports children in learning to read words in other ways, e.g. reading words from memory, reading words by analogy to known words, and reading words using spelling patterns and multisyllabic decoding strategies. The Panel also suggests that it may be important to include systematic teaching in reading fluency when phonics is taught to older children. In the light of Stephen's profile we will return below to more practical suggestions for developing fluency.

Phonics taught early proved much more effective than phonics teaching introduced after Year 1. The conclusion the evidence seems to support is that systematic phonics teaching produces its biggest impact on growth in reading when it begins in reception class or Year 1 and before pupils have learned to read independently.

But what is meant by 'systematic' here? Systematic phonics programmes teach phonics explicitly by delineating a planned, sequential set of phonic elements. A key feature distinguishing systematic from non-systematic phonics teaching is the identification of a full array of letter-sound correspondences to be taught (NRP 2000: 2-99). The array includes the major correspondences between consonant letters and sounds and also short and long vowel letters and sounds, and vowel and consonant digraphs (e.g. oi, ea, ou, sh, ch, th). It may also include blends of letter-sounds that recur as subunits in many words, such as initial blends (e.g. st, sm, bl, pr) and final stems (e.g. -end, -ack, -ill, -op). A systematic approach does not merely teach the alphabetic system but also offers practice in applying this knowledge in reading and writing. Teaching may provide children with text incorporating words that can be decoded using the letter-sound correspondences already taught or children might write their own text and read others' text using the letter-sounds taught.

Synthetic and analytic phonics

It is important at this point to distinguish between synthetic and analytic phonics. The former emphasizes letter-by-letter phonological decoding. What is emphasized is the phoneme. The teaching strategy here is to sound and blend the sequential letter-sounds. This is an example of what the teacher using this approach might do (Juel and Minden-Cupp 2001). For the word 'hat', she writes each letter, touches each one and asks the pupils to say each sound. Then they blend the sounds, as she makes a

blending motion under the word. In other words children are taught to say the sounds of letters and blend them to decode unfamiliar words. A systematic phonics programme would typically begin by teaching children relations between individual letters and pairs of letters called digraphs (e.g. th, ai, ch, oi) and all 44 sounds or phonemes of the language (NRP 2000: 2–104).

An example of a synthetic phonics programme used in England is *Jolly Phonics*. Developed by a teacher, Sue Lloyd, in 1993 for 4- and 5-year-olds in their first year of school, the programme uses meaningful stories, pictures and actions to reinforce recognition and recall of letter-sound relations, and precise articulation of phonemes. There are five key elements to the programme:

- 1 learning the letter sounds;
- 2 learning letter formation;
- 3 blending for reading;
- 4 identifying the sounds in words for writing; and
- 5 tricky words that are high-frequency and irregularly spelled.

The programme promotes playful, creative, flexible teaching that fits well with whole-language practice (NRP 2000: 2–125) and leads directly to authentic reading and writing. A feature of *Jolly Phonics* is that children are taught hand gestures to help them remember the letter-sound associations. The value of mnemonics for teaching letter-sound relations to younger children is supported by research evidence (Ehri *et al.* 1984). Application of this principle is also found in *Letterland* (Wendon 1992), a programme designed to teach young children letter-sound associations. Here all the letters are animate characters that assume the shape of the letters and have names priming the relevant sound e.g. 'Sammy Snake', 'Anne Apple'. What this approach achieves is added motivational value for children – by making the learning into a game and playful, it guards against boredom and speeds up the learning process.

Analytic phonics avoids having children pronounce sounds in isolation to figure out words. Rather they are taught to analyse letter-sound relations once a word is identified. Analytic phonics can also refer to the process of identifying unknown words with analogy to the onsets and rimes in known words. (Some authors describe this as 'analogy phonics' – e.g. NRP 2000.) In this approach, the pupils are taught key words that contain common spelling patterns. The pupil is then taught to break an unknown word into its component onset and rimes and to search a word wall for known words with the same onset or rime. If 'hat' was an unknown word, the child might note the /at/ finding the known word 'cat' on the word wall and observing 'If I know "cat" then I know "hat"' (Gaskins *et al.* 1986 and Juel Minden-Cupp 2001). Examples of such programmes include Reading Recovery and the Benchmark Word Identification Program (Gaskins *et al.* 1986).

The jury is out as to whether phonic knowledge is best developed synthetically or analytically. (Juel and Minden-Cupp 2001: 5) say:

There is now evidence that of those children who really struggle with decoding, some profit more from a synthetic phonics approach while others find an analogy approach easier to use as an instructional strategy . . . The optimal match of instructional strategies and linguistic units used in that instruction, for children with differing levels of word recognition skill, is far from clear in laboratory settings – let alone in classroom settings. Both the instructional unit (i.e. phoneme or onset and rime) and instructional strategy (i.e. sequential letter-by-letter decoding versus making an analogy to a key word) may differentially affect children.

However, Juel and Minden-Cupp's own subsequent work, based on classrooms, sheds some light on this question. They found that a structured phonics programme that included both onsets/rimes and the sounding and blending of phonemes within the rimes was very effective. Important to note here is that the rime unit had to be analysed into its component letter-phoneme correspondences, especially for those children who entered first grade with limited knowledge of letter sounds. So it seems both approaches are beneficial. The NRP review of the evidence found no significant difference in the impact of both methods; what seems to be important is the systematic approach to the development of phonic knowledge.

The message for educators, who, unlike researchers, have to make decisions that affect individual lives in the here and now and who cannot wait for research to offer definitive answers, is first, to be mindful of the state of the current knowledge base and second, to make a professional judgement based on that knowledge and their own professional context and set of learners. What is key perhaps is not to be dogmatic about how to develop this awareness, important though it is, but rather to be open-minded to the several possibilities for doing it effectively.

It would appear that when phonics is taught to children at the outset of learning to read and continued for some two to three years the children achieve greater growth in reading than do those children who receive only one year of phonics instruction. However, the evidence on this is but suggestive and not definitive. Further research will have to determine more precisely how long phonics teaching should last.

Developing phonological awareness and phonic knowledge in the classroom

Research discussed above shows that phonemic awareness is essential for understanding the alphabetic principle and for acquiring phonic knowledge.

In recent years there has been a proliferation of guidebooks, materials and programmes for the purpose of developing young readers' appreciation of the alphabet system via phonemic and phonic training (e.g. Adams *et al.* 1998; Dombey *et al.* 1998; Torgesen and Mathes 2000; DfES 2001; and Goldsworthy 2001).

Phonological skills can be developed incidentally through oral language, songs, rhymes, riddles, word play in stories, and invented spelling as well as games, activities and exercises (e.g. 'I spy') which draw attention to speech sounds. Most teachers probably use a combination of all these approaches. The key thing about all these activities is that they take place in a language-rich environment where attention is often turned to language itself. We cannot but notice children's natural propensity to experiment and play with sounds and the teacher can capitalize on this propensity to play with words separate from their meanings. Among the more practical ways of sensitizing young children to the sounds in language are children's books that deal playfully with speech sounds through rhyme, alliteration, assonance and so on. And among the best around still are the Dr Seuss books, although there are very many available. See Yopp (1995) for an annotated bibliography. The critical feature of such books is that they shift the child's attention from the message of the text to the language itself that is used to tell the message. Hallie Yopp (1995) suggests five sequenced things to do with such texts:

- 1 Read and reread the story for the pure joy of reading and sharing.
- 2 Comment on the language use and gently guide attention to the word play.
- 3 Encourage predictions of sounds, words or phrases and then ask the children how they arrived at their predictions.
- 4 Examine language use. Depending on the age of the children she suggests the teacher might explicitly point out and analyse phonemic features. For children aged 4 to 7, for example, the teacher might say 'What sound do you hear at the beginning of all those words? (Yes, the /k/ sound). Isn't it interesting how the author uses so many words with the /k/ sound? What are some other words that begin with the /k/ sound?'
- 5 Create additional verses or make another version of the story. Children can change the story yet maintain the language pattern to develop their own versions of the story.

Programmes designed to promote phonological awareness more directly than my descriptions above typically include activities to develop skills in rhyming, alliteration, syllable awareness, identifying initial sounds of words, identifying onsets and rimes, creating words from given onsets, identifying final sounds, sound blending, segmenting words into syllables and phonemes, exchanging phonemes to create new words and mapping phonemes to letter symbols. As already noted above, sound blending is easier than

phonemic segmentation, and exchanging phonemes and mentally manipulating sounds in words is probably the most difficult skill to achieve. Beyond the most basic level, phonemic awareness training can be fully integrated with the teaching of letter-sound correspondences and related whenever possible to the child's attempts at invented spelling.

The NRP review demonstrated that phonological training seems to have maximum benefit when it is combined with teaching in letter-sound correspondences. Connections between speech sounds and letters need to be thoroughly understood and applied to decoding. Key activities here would include working with onsets and rimes in a way that facilitates understanding of the orthographic patterns of language (e.g. 'plant', 'slant', 'stamp', 'lamp' and so on). The activities provided in the classroom need to be based on learner need as indicated by the stage they have reached in terms of their reading development.

Stahl (1992) offers nine guidelines for exemplary phonics teaching. These are summarized here.

- 1 'Builds on a child's rich concepts about how print functions'. Key here is that letter-sound teaching makes no sense to a child who does not have an overall conception of what reading is all about and what it is for.
- 2 'Builds on a foundation of phonemic awareness'. Phonemic awareness is easily taught but absence of it leads to reading difficulties.
- 3 'Is clear and direct'. Stahl encourages teachers to avoid ambiguity. He gives an example of a direct approach for teaching the /b/ sound in 'bear'. He suggests that you show the word 'bear', in the context of a story or in isolation, that you point out that it begins with the letter *b*, and that the letter *b* makes the /b/ sound. This approach, he says, goes to the basic concept, which is that a letter in a word represents a particular phoneme.
- 4 'Is integrated into a total reading programme'. Phonics instruction, he suggests, should never dominate reading teaching. At least half of the time in a reading lesson, he suggests, should be devoted to reading connected text and no more than 25 per cent of the time should be devoted to phonics teaching.
- 5 'Focuses on reading words, not learning rules'. It is important to remember that effective decoders see words not in terms of phonic rules but in terms of patterns of letters that are used to aid word identification. Effective phonics teaching first draws attention to the order of letters in words, urging them to notice common patterns in words.
- 6 'May include onsets and rimes'. An example offered here is how children are taught to compare an unknown word to already known words and to use context to confirm their predictions. For example, when encountering the word 'wheat' in a sentence, the pupil might be encouraged to compare it to 'meat' and say 'If m-e-a-t is "meat" then this is "wheat"?'.

The pupil then cross-checks the pronunciation by seeing if 'wheat' made sense in the sentence. This approach is comprehension-driven but it does teach decoding effectively.

7 'May include invented spelling practice'. Practice with invented spelling does improve children's awareness of phonemes, which is an important precursor to learning to decode.

8 'Develops independent word recognition strategies, focusing attention on the internal structure of words'. The purpose of phonics teaching is to get learners to notice orthographic patterns in words and to use those patterns to recognize words.

9 'Develops automatic word recognition skills so that students can devote their attention to comprehension, not words'. Stahl suggests that once a child begins to use orthographic patterns in recognizing words and recognizes words at a fluent pace, then it is time to move away from phonics teaching and spend more time on reading and writing text.

Juel and Minden-Cupp (2001) offer very precise, research-based guidance in relation to teaching children who enter the first grade (Year 1) with minimal reading skills. Their evidence led them to conclude that such children have the greatest success with the following classroom practices:

- 1 Teachers modelled word recognition strategies by a) chunking words into component units such as syllables, onset/rimes, or finding little words in big words, as well as modelling and encouraging the sound and blending of individual letters or phonemes in these chunks, and b) considering known letter-sounds in a word and what makes sense.
- 2 Children were encouraged to point to words as text was read.
- 3 Children used hands-on materials (e.g. pocket charts for active sorting of picture cards by sound and word cards by orthographic pattern).
- 4 Writing for sounds was part of phonemic instruction.
- 5 Instructional groups were small with word recognition lesson plans designed to meet the specific needs of children within that group.

In this country, Henrietta Dombey and Myra Barrs argue in favour of whole-to-part phonics teaching (analytic). They suggest that, rather than proceeding from the part to the whole (e.g. sounding out an unknown word), children are more likely to begin with a repertoire of known words and proceed from wholes to parts. Barrs says 'children come to understand how to break words down rather than how to build them up; their favoured approaches are analytic rather than synthetic' (Dombey *et al.* 1998: 1). The work of Goswami and Juel noted above would support this contention.

As has been argued several times in this book, there is empirical evidence for the value and importance of early, explicit teaching in word recognition. Likewise, there is evidence that pupils benefit from reading high-quality

children's literature. So teaching phonics in association with children's literature maximizes learning opportunities. The major value of whole-to-part phonics teaching as described in Dombey *et al.* (1998) is that their whole-to-part framework integrates learning to read with real reading. Indeed there is conclusive evidence now that the most effective literacy teachers use a balance of approaches to the development of literacy and to reading in particular (e.g. Pressley 1998).

What about developing fluency? Stephen again

Fluent reading involves reading words accurately, rapidly, and automatically in a way that frees the reader's cognitive resources to concentrate on meaning. However, more recent conceptions of fluency also include the ability to group words appropriately into meaningful syntactic units for interpretation. Fluency requires the speedy use of punctuation and the decision as to where to place emphases to make a text make sense. The point is that readers have to carry out these processes rapidly and without conscious attention. Research evidence now shows that gradual, continuous improvement in reading speed happens through practice (NRP 2000). Moreover, there are two aspects worth identifying – accuracy of word recognition and automaticity of word recognition. In the early stages of reading the beginner reader may be accurate in word recognition but the process is usually slow and effortful. With increased practice and exposure to the words in the texts the pupil reads, word recognition continues to be accurate but improvements in speed and ease of word recognition are also evident. The teacher has to balance both of these processes – accuracy and speed/expressiveness or fluency. Accuracy is not enough to ensure fluency and without fluency, comprehension may be impeded (NRP 2000: 3–8).

You will recall that the evidence to date on phonics suggests that older, struggling readers like Stephen seem to benefit less from phonics than their younger counterparts who have not yet started to read independently. The current thinking is that such children might benefit from phonics instruction combined with training in fluency. As virtually all our scholars observed, Stephen's reading lacked fluency most likely because he had to concentrate on the words due to his lack of word identification skills. Ann Browne referred to the need 'to speed him up' and Laura Huxford talked about 'fluency building'. Fluency is seen as an important marker of a proficient reader, yet teacher guidance on this facet of reading is quite rare.

Slow readers, by definition, read fewer words per given amount of time than readers who read at more normal rates. Thus, just to keep up with their classmates in the amount of reading done, these slower readers have to invest considerably more time and energy in their reading. So tackling fluency would seem to be a vital aspect of enhancing the reading proficiency of the

struggling reader. Thinking of how slowly Stephen read and the fact that all our scholars referred to the need to enhance his fluency, I found the suggestions of Timothy Rasinski (2000) and Rasinski *et al.* (1994) very helpful.

First, this is how he described the negative consequences at classroom level of a hypothetical child like Stephen:

Imagine yourself as a fifth-grade [Year 5] student who is assigned to read a 12-page chapter in a social studies book in school. Imagine also that you are a disfluent or inefficient reader. You read at 58 words per minute . . . or about half the rate of your classmates. You begin reading as best you can. Like most students, you are well aware of what is happening around you. You are about halfway through the passage, and you notice that many of your classmates have finished reading – they are done and you still have six pages to read. What do you do? Do you pretend to have completed the assignment even though you haven't read or comprehended the entire passage? Or, do you continue reading knowing that by doing so you will be broadcasting your lack of reading proficiency and making your classmates wait on you? Neither solution is very palatable, yet the problem is all too common. Even if an assignment were made for home reading, the 60-minute reading assignment for most students would become two hours of reading for you. Checking out of the reading club may be just around the corner. You may become a 9-year-old . . . who claims never or hardly ever to read for fun. And if you don't read, chances are your progress in reading will continue to decelerate.

(Rasinski 2000: 147)

He and other reviewers like the National Reading Panel established that slow reading is associated with poor comprehension and poor overall reading performance. Citing research dating back over 60 years Rasinski suggests that faster readers tend to have better comprehension of what is read and tend to be, overall, better readers.

Some proven strategies for enhancing fluency include guided repeated oral readings, reading while listening or echo listening and reading in phrases. All these approaches have pupils reading passages orally multiple times while receiving feedback from peers, parents or teachers. These methods have been tried and tested by research and found to be effective. The problem for the class teacher, however, especially without the support of classroom assistance, is that all these methods were originated for use in one-to-one or small group settings. Rasinski advises, therefore, that teachers use other proven, classroom-based approaches. He suggests modelling fluent reading. Pupils need frequent opportunities to see and hear fluent reading and, often, less fluent readers miss out on hearing other, fluent readers read as they may be assigned to reading groups composed of non-fluent readers. Choral reading is another means that is suitable for the regular classroom.

Listening to tape recordings of a favourite book while following the text has the advantage of allowing pupils to work on their fluency independently. Hennessey Dombey specifically mentions this approach.

Laura Huxford suggested Stephen might look on to the next full stop, then read to that. There is evidence that marking phrases or sentences in the pupil's text with a slash aids fluent reading. Reading short texts such as poems, famous speeches, or popular songs marked in this way may support a more smooth phrasing. If, as in Stephen's case, the lack of fluency is due to lack of word recognition skill, then fluency is best promoted with materials that they find relatively easy in terms of word recognition. The use of easier texts allows the non-fluent reader to concentrate on expression. Both Ann Browne and Laura Huxford recommended the use of simpler texts for Stephen to avoid having him read at frustration level. It is important to find texts that are well within the reader's independent-instructional range in order to promote fluency. Short, highly predictable selections that are meant to be read aloud and with expression, such as rhyming poetry, are ideal. Rasinski suggests, for developing fluency.

Topping (1987) found that paired reading could significantly accelerate students' reading fluency and overall proficiency. Rasinski used this approach to good effect. He asked parents of struggling readers to engage in a form of paired reading with their children for 10 to 15 minutes each evening. Parents read a brief poem or passage to their children. This was followed by the parent and child reading the text together several times and, finally, the child reading the text to the parent.

Laura Huxford also suggested a 'buddy system' for improving Stephen's fluency and Teresa Grainger called the same idea 'reading partnerships'. Research has shown that 'buddy reading' is an excellent way to promote fluency (Rasinski *et al.* 1994). In this the benefits of repeated readings and paired reading are linked. Let's take a Year 3 child like Stephen who lacks reading fluency. This child is paired with a Year 2 child who is also having difficulty in reading. The Y3 child meets the Y2 child twice a week and reads with her or him a passage from one of the Y2 child's books for about 20 minutes. To plan for the encounter, the Y3 child needs to practise the assigned passage (which will be somewhat easier for her/him to read because it is at a difficulty level appropriate for Y2 child) so that he/she can read it with accuracy and expression with his/her partner. This may require several readings of the passage. The Y3 child does this with enthusiasm since it has a real purpose. Rasinski suggests the Y3 child first reads the passage to the partner, then they read it together once or twice, and then, if time allows, the Y2 child reads it while the partner follows along and provides support and encouragement. His evidence shows that both children gain from this experience as readers.

Finally, a 'Readers Theatre' performance (Tompkins 1997) is a dramatic reading of a script by a group of pupils. Teresa Grainger also recommended

this approach for Stephen. Pupils assume roles and rehearse reading the script. During rehearsals the pupils practise reading a particular character's lines in the script. They convey the mood and theme by using their voices and facial expressions. Then the pupils give a performance of the script for a group of children or another audience.

Should children be taught the alphabetic system early?

In an earlier section I mentioned Cunningham's critique of the conclusions drawn by the National Reading Panel, and in particular his critique of the NRP's claim that children should be taught the alphabetic system early. The question is: how important is it that children are able to use the alphabetic system early? In the light of the evidence discussed here, you should be in no doubt about the thinking of those who take a cognitive-psychological perspective on reading in relation to the significance of early word recognition skill. It is seen as vitally important.

This is so, they argue, because early attainment of decoding skill very accurately predicts later reading comprehension (e.g. Clay 1979; Lesgold and Resnick 1982; Juel 1988). The conclusion from this body of literature seems to be that a child who does poorly in reading in the first year of school (after kindergarten or nursery/reception) is likely to continue to do poorly. There is also evidence that good 9-year-old readers from previous assessments are likely to remain good readers through secondary school (Juel 1991).

This is not surprising when you consider that research has found that good decoders in Grade/Year 1 are exposed to about twice as many words as poor decoders. Juel (1988) found that the in-school differences in exposure to print continue in subsequent years. These in-school differences in exposure to print are then further compounded when you consider out-of-school differences in reading. Interviews with the older, poor readers showed that they read little because by now they had grown to dislike reading. Also other research, cited in Juel (1991), suggests that in about middle primary the major determinant of vocabulary growth is the amount of free reading. In interpreting this downward spiral and labelling it the 'Matthew effect', Stanovich (1986: 381) says 'the rich get richer':

The effect of reading volume on vocabulary growth, combined with the large skill difference in reading volume, could mean a 'rich get richer', or cumulative advantage, phenomenon is almost inextricably embedded within the developmental course of reading progress. The very children who are reading well and who have good vocabularies will read more, learn more word meanings, and hence read even better. Children with inadequate vocabularies – who read slowly and without enjoyment – read less, and as a result have slower development

of vocabulary knowledge, which inhibits further growth in reading ability.

The message we need to take from this is that acquiring the alphabetic principle early is important. However, we need to bear in mind that the best way of achieving this in the classroom is by building meaningfully on what the learner already knows. This would require the integration of print knowledge with real reading for meaning, as I have emphasized at various points above.

Developing comprehension strategies in the classroom

There is one other important aspect of reading to which this school of thought made a significant contribution and here David Wray's own research is especially important in England. This is comprehension. In discussing Stephen's needs David Wray emphasized the importance of having a wider choice of reading material available to him. He talked about the importance of non-fiction texts, especially for boys, and he mentioned the tendency on the part of some teachers to privilege story or fiction. In addition he talked about the importance of silent reading and finding ways (other than oral reading) for Stephen to demonstrate what he can do with text. He would encourage Stephen's teacher to use silent reading and to foster his comprehension strategies.

Comprehension has not typically been taught well in schools, often being relegated to subjects other than English or reading lessons and, as I mentioned in Part One, studies of practice by Her Majesty's Inspectors in England highlighted the need for more effective ways of promoting children's comprehension and information-seeking skills. Indeed it is likely that you cannot recall any time when you were taught comprehension in an explicit way. It is most likely that you experienced lessons where comprehension was tested i.e. where a typical comprehension lesson consisted of reading a piece of prose and then answering mostly literal questions and possibly some inferential questions about its content. In the past teachers typically did not show pupils strategies they could use in reading to comprehend what they read.

The idea behind more explicit teaching of comprehension is that it can be improved by teaching pupils to use specific cognitive strategies. Such strategies are designed to guide pupils to become aware of how they are understanding as they read, and ultimately to read demanding text independently of the teacher. Our better understanding of cognition, i.e. of how people come to know and understand things, has led to the development of practical strategies for improving comprehension. Furthermore, the research evidence (see NRP 2000) demonstrates that pupils at all skill levels benefit from being taught comprehension strategies.

Comprehension is complicated and it requires a correspondingly complicated set of educational strategies to foster it effectively in the classroom (Pressley 2000). Rather surprisingly, in view of its significance, how children learn to comprehend text only began to be studied scientifically in the past thirty years. Although the cognitive-psychological school designed and tested theoretically based strategies for the development of comprehension in the classroom and demonstrated the need to teach comprehension, you will see how the psycho-linguistic perspective also informed this line of enquiry. Much of the research that has been conducted conceptualizes reading as a purposeful, active, meaning-seeking process. According to this view, a reader reads a text to take a message from what is read, to construct memory representations of what is understood, and to put all that to some use (NRP 2000: 4–39). First, I will briefly describe some concepts that underpin the pedagogical approaches detailed in this section, the first of which owes much to the psycho-linguistic school. Most of this section, however, will be devoted to strategies for the promotion of comprehension in the classroom.

Schema theory: the significance of prior knowledge

Schema theory is a theory about the way knowledge is structured and stored in memory (Rumelhart 1980; Pearson and Stephens 1994; Pressley 2000). A central tenet of schema theory is that much of what we know is stored in complex relational structures known as schemata (i.e. the plural for schema). Schemata are like containers into which we store particular experiences we have. The schema for chair is stored in our chair schema. The schema for a wedding ceremony is stored in our wedding ceremony schema. Thus, the schema for wedding includes its purpose – so two people can get married – where it happens – in a church or a registry office – who attends – bride and groom, guests etc. Schema theory explains not only how and where we store information in memory but also how we establish relations between one schema and another, and this enables us to understand events easily. So for example, once you encounter a small part of the wedding ceremony schema, like the bride's dress, this activated schema causes reasonable inferences to be made about other possible details of the event – the groom, the bridesmaid and so on. Schematic processing is top-down in that the higher order process is triggered first and this triggers attention to the details.

Schematic processing influences comprehension of events around us from early in life and it is this knowledge that allows readers to draw inferences from text that includes information related to their schematic knowledge. Thus the richer a child's world experiences (whether real or vicarious i.e. via reading, TV, etc.) the stronger the schematic knowledge base (Pressley

2000). Clearly, another term for schematic knowledge is prior knowledge – something the psycho-linguists greatly stressed. Schema theory fits well with the constructivist notion of learning, that all learners build their own meanings. In terms of comprehending written language, this means that the prior knowledge the reader brings to the text is crucially important and the implication is that the location of meaning is problematic. Where is meaning actually located? How can meaning now reside in the text? Does it reside in the reader who constructs her or his unique interpretation of the text based on her or his prior experiences? Or is it somewhere in between, in the interaction between the reader and the text?

But, for now, you can appreciate the situation where a reader's interpretation may be too text-based or too reader-based (Tierney and Pearson 1994). In the former case it may be that certain conditions of schooling predispose the reader to give such independent status to the text it is entirely divorced from the reader's prior knowledge. The task of reading is seen as having little to do with the person's personal life or lived experiences. What can a teacher do in such circumstances? Cloze procedure exercises that require exact word replacements would obviously encourage such thinking. Cloze procedure exercises are used to develop and assess text comprehension. The teacher selects an excerpt of say 300 words from a text – informational book, textbook or storybook. Then s/he deletes say every fifth word in the passage and the task for the pupils is to use their knowledge of the topic or narrative, of word order in English, and of the meaning of words within sentences to decide on the missing words in the passage. Variations on this procedure include deleting the content words, deleting phrases or even whole sentences. Cloze procedure exercises that invite discussion of plausible words, phrases and full sentences would suggest a more personally creative and individual response demanding more integration with the reader's previous knowledge and experiences. Pupils work in groups or individually and they discuss and justify their selections. Another technique is to ask pupils to say what they think of when they hear the word *x* (the topic of the text they are about to read), jotting down all the suggestions and perhaps categorizing them in some way. Then they read the passage or the chapter to learn more about *x*. They return to their own original categories and now they add to them on the basis of their new knowledge. What this kind of activity offers is a demonstration of pupils' pre-existing schema, new learnings from the text, and the link between new and old knowledge (Tierney and Pearson 1994).

The reader who tends to be too reader-based needs to attend more carefully to the text, to self-monitor (see below), perhaps to take notes, and to underline key ideas.

Unsurprisingly, good readers use their relevant prior knowledge to make sense of what they read and weak readers frequently undermine their

comprehension by bringing in irrelevant prior knowledge and linking it to the text. But comprehension does not always occur via schematic knowledge. Sometimes comprehension occurs from the bottom up with the reader working through many separate ideas or propositions in the text so you end up with networks of ideas or propositions. In either case – whether through schematic processing or developing a network of propositions – the process is automatic and largely unconscious.

Conscious comprehension processing: what do readers do?

We now know that sophisticated readers use a range of strategies as they read texts. David Wray and Maureen Lewis (1997) offer a very useful description, based on their own research with teachers, of the kind of mental activities that go on as we interact with texts, specifically non-fiction texts. They called their project *Extending Interactions with Texts* (EXIT). Here are the mental activities involved:

- i Eliciting previous knowledge (the use of KWL grids are helpful here – see below).
- 2 Establishing a purpose (they suggest the purpose should be precise so for example 'to find out about dinosaurs' may be too vague; it might be better to have a purpose such as 'find out about the size of dinosaurs so I can draw scale pictures of them on the wall chart').
- 3 Locating information.
- 4 Adopting an appropriate strategy (here modelling might be useful, see below).
- 5 Interacting with text (e.g. underlining, highlighting, numbering, cloze procedure).
- 6 Monitoring understanding.
- 7 Making a record (e.g. notetaking).
- 8 Evaluating information (e.g. recognizing when information might be dated, wrong).
- 9 Assisting memory.
- 10 Communicating information.

Teaching strategies for fostering some of these specific mental activities are described below.

Duffy, another researcher in this field, argues that comprehension strategies are not skills that can simply be taught by drill methods, rather they are plans for constructing meaning (Duffy *et al.* 1998). Being strategic is not simply about knowing the strategies – like summarizing, self-questioning, predicting based on prior knowledge – but about knowing how and when to apply them. It is not surprising therefore that comprehension development is a long-term project. Pupils need more than mere practice in the

application of these strategies; they need opportunities to see the value of them and to apply them flexibly.

Pressley (2000) suggests that unless the reader can recognize most words in the text automatically, it will be impossible to apply reading comprehension strategies effectively. His first piece of advice, therefore, is to teach decoding skills and encourage the development of sight words. He also suggests the teaching of vocabulary. The NRP's review of effective vocabulary instruction recommends that vocabulary should be taught directly and indirectly. There is a need for direct teaching of vocabulary that is required for a specific text to be read as part of a lesson. The more connections that can be made to a specific word or term, the better that word or term is learned. Pre-teaching of vocabulary in reading lessons has been shown to have a significant effect on learning outcomes (NRP 2000: 4–25).

Ways of developing comprehension in the classroom

There are two key elements of comprehension: first, knowing the strategies and second, knowing when to use them. Drawing mostly on the work of Pressley (2000), Gaskins and Gaskins (1997), Wray and Lewis (1997) and the work of the National Reading Panel (2000), I will begin by outlining some important tried and tested strategies and then I will describe 'reciprocal teaching' or 'multiple strategy teaching' which is designed to promote the coordination of several cognitive strategies. The latter is about adapting cognitive strategies and using them flexibly according to the demands of the situation.

Teaching that is explicit and informed: summarizing

All readers benefit from explicit teaching but it is even more important for poor readers like Stephen who may not discover concepts, skills and strategies on their own as good readers often do. Teaching that is explicit and informed means explaining clearly what the concept or skill is that you are trying to develop in your pupils, how and when they could use it, and why it is important. Having pupils informed about its usefulness has been found to be important for their ability to transfer what has been learned to new situations. Here is how Gaskins and Gaskins (1997: 151–2) imagine the dialogue for explicitly introducing a new strategy:

- 'What: Today we are going to learn... What this means is...
- 'Why: This is an important strategy because...
- 'When: You can use this strategy when... Tomorrow I want you to tell me a time during reading when you applied the strategy we are learning today.

– 'How': The teacher next tells the students exactly how to do the strategy, being very explicit about the self-talk (what students should say to themselves as they employ the strategy) and usually illustrating the use of the strategy with a personal experience.

They go on to describe how one teacher introduced summarizing as a way to self-monitor.

Teacher: Today we are going to learn a strategy for self-monitoring. What this means is we are going to learn one way to figure out whether we understand what we are reading. Why do you think it is important to self-monitor as you read?

Student: Because reading has got to make sense and, if it doesn't, you've got to fix it.

Student: Because if you don't think about what you're reading, you won't know what you're read when you get through.

Student: Strategies keep you actively involved.

Teacher: Those are fine reasons. You seem to be saying that it is important that you take some kind of strategic mental action while you are reading to be sure that you are making meaning. Self-monitoring is a strategy you can use whenever you read. . . . One way I self-monitor is to read a portion of text, then stop and try to say in my own words what the important points were that I just read. . . . I find when I just say the summary to myself, I sometimes kid myself into thinking that I understand when I don't. Therefore, when the information is new to me and it is important that I understand what I am reading, I usually not only say the summary to myself, but, after I say it, I write the summary. When I can't write a summary of what I read in my own words, then it usually means I didn't understand it. . . . I photocopied one of the chapters so we could work on it together. Follow along as I read the first page and think aloud about the main point in each paragraph, then I'll try to pull these main points together to check my understanding.

These researchers have trained teachers to *walk* pupils through how to use the strategies. The teachers trained in this way do not expect that their pupils already know how to do such things as summarize, predict, infer and self-monitor.

Question generation and asking 'why' questions

Without guidance young readers are unlikely to question themselves as they read. The purpose of helping pupils to generate questions as they read is to enable them to construct better memory representations of the text contents. If you encourage, and model for pupils, self-questioning

while reading, you help them to integrate parts of the text and gain a deeper understanding of the text. There is strong scientific evidence that teaching pupils to question as they read promotes reading comprehension in terms of memory, answering questions based on the text, grasping the main idea, and summarizing the text. Pupils can be encouraged to ask themselves why, how, when, where, which, and who kinds of questions as they read.

Expository text or non-fiction or fact-filled text can be made much more memorable by encouraging pupils to 'why question' and answer themselves about why the facts in the text are sensible. This approach is especially beneficial for pupils in middle and upper primary grades. The reason this approach is so successful is because it taps pupils' relevant prior knowledge or existing schema and encourages them to link what they read in the text with their previous experiences and understandings.

One particularly successful question-generating strategy, developed by Ogle (1986), is the K-W-L strategy, or Know, Want-to-Know, Learned. This has since been recommended by several reading theorists including David Wray. It can be used with the whole class, small groups or by a single individual. Before a non-fiction text is read the pupils brainstorm all they know about the topic, and list these facts as bullet points in a chart that is ruled into three column headings as follows:

<i>What we know</i>	<i>What we want to know</i>	<i>What we learned</i>

The first column is about activating prior knowledge. Under the second column the pupils generate some questions they think the text might address. This part requires them to think about questions, to predict and to reflect on the information that is needed. Following their reading of the text (either silently or as a shared activity) they summarize, using bullet points again, the main points they have learned from the text. Here they have to reflect, consolidate, evaluate and summarize. Some writers (Yopp and Yopp 2001) have added a fourth column to the chart requesting pupils to record how they felt about the material in the text and how they plan to use the information they have learned.

Mental imagery

Visualization is often recommended by psychologists as a means of preparing to cope in a new situation. For example, if your new experience is to attend what you suspect will be a challenging interview or to teach a

difficult class, it is suggested that the act of visualizing yourself successfully operating in that situation helps you to adapt to its demands. Mental imagery in comprehension is not unlike that. In imagery training for comprehension, the pupils are taught to construct a visual image to represent the text as they read it. To do this requires an interpretation of the text. This is especially suited to a situation where what is to be read is a short passage or even a sentence. Imagery training improves memory and assists connection making as well as supporting inferential reasoning. The idea is that the constructed image serves to embed the text's meaning in memory.

Graphic organizer

This is a diagram of the concepts and their relationships in the text which can be either fiction or non-fiction – often referred to as a story map, if fiction. The graphic aid or diagram helps pupils to focus on text structure while reading and assists them in writing summaries. You show your learners how to create a graphic organization of their ideas. For example, you could provide a graphic metaphor like a picture of an umbrella for the main ideas. Another might be a circle where the centre of the circle has the main idea of the story or passage with other ideas written in around the main idea.

Story structure and story mapping

Story structure and mapping are ways of helping the reader identify the content of the story and the way it is organized into a plot structure. Understanding that a story is organized as a set of episodes with a setting, a series of events, reactions, goals, attempts, and outcomes, helps the reader understand the who, what, where, when, and why of stories as well as what happened (NRP 2000: 4–88). Essentially you teach pupils how to ask and answer five main questions:

- 1 Who is the main character?
- 2 Where and when did the story occur?
- 3 What did the main characters do?
- 4 How did the story end?
- 5 How did the main character feel?

Pupils are helped to construct a story map by recording the setting, noting the problem, identifying the goal and the action that was taken, and stating the outcome of the events. This strategy proved to be especially helpful with less able readers. More able readers may not need such explicit teaching.

Multiple strategy teaching: reciprocal teaching

Reciprocal teaching is intended to help pupils adopt a flexible approach to comprehension strategy use. It is designed to help them understand how to study and learn from text (Palincsar and Brown 1984). The job of the teacher here is to show and give practice to pupils in the use of four strategies: prediction, questioning, seeking clarification when confused, and summarizing. It is best to ensure that the pupils know and can use each of these strategies on their own first. You can do this through teacher modelling, thinking out loud, direct explanation, and giving plenty of guided practice in the use of the strategies (see above example about summarizing). If, for example, the strategy is predicting, you might model the process of predicting – you think out loud about what clues are being used to make a prediction, why you (or some pupils) selected a particular clue, and how you or they put the clues together to make a prediction. What this involves is making the mental processes, that are usually hidden from view, overt. Reciprocal teaching is most suited to a small group situation. For convenience a reciprocal teaching lesson can be described in six steps (Herrmann 1988: 27–8):

- 1 Read the text title and invite the pupils to say what they expect to learn from the text. Summarize the group's predictions.
- 2 Read a few paragraphs of the text aloud.
- 3 Ask a question about the content. Discuss the answers. Invite the group to pose their own questions.
- 4 Summarize what has been read by noting the gist of the section and explain how you arrived at this summary. Invite comments on your summary from the group.
- 5 Lead a discussion to clarify any words or ideas that are unclear or confusing.
- 6 Signal preparation to move on to the next section of the text by eliciting predictions regarding upcoming content. Select a pupil to be the next 'teacher'.

The cognitive-psychological perspective and the National Literacy Strategy

Current literacy policy in England is hugely influenced by the cognitive-psychological perspective discussed above. In this section, I will refer to the nature of that influence.

Where is the influence of a cognitive-psychological perspective? It is evident in two key respects that bear on the content of the literacy curriculum. First, the emphasis on word recognition, and within that on phonological awareness, and second, the emphasis on comprehension in the text-level

work. The evidence discussed in this Part would support the status that the NLS accords to word recognition. The development of the beginner reader's spelling-sound knowledge by engaging in activities and with texts that lay bare the alphabetic principle is a key message of the cognitive-psychological school. In the NLS, there are 14 precise objectives associated with word-level work to be achieved by children in their first year of school; a further 14 in term one of their second year; and a total of 87 up to the end of the year in which they reach seven years of age – all to be addressed in the specified sequence. Further sets of objectives are prescribed for these children in sentence-level and text-level work.

What teachers have to do during the 15 minutes of word-level work, which the Strategy says is to take place in a whole-class setting, bears on content, sequence and objectives:

There must be a systematic, regular and frequent teaching of phonological awareness, phonics and spelling throughout Key Stage 1. Teachers should follow the progression set out in the word level objectives carefully. It sets out both an order of teaching and the expectations for what pupils should achieve by the end of each term.

(DfEE 1998a: 11)

While there is a strong emphasis in the NLS on the systematic teaching of word recognition via phonics, there are also several references to the importance of the application of this knowledge so it is meaningful to the learner. All of this fits with the research reviewed above.

What is less easy to justify in the Strategy is the prescriptive nature of the pedagogy designed to achieve that content. The NLS seems to be more prescriptive about sequence and organization of learning than the evidence reviewed in this Part of the book would sustain (and as we noted in Part One it is out of step with the principles of whole language). For example, the NRP suggests the evidence supports the teaching of phonemic awareness to small groups of learners whereas the NLS tends to place more emphasis on large groups i.e. whole-class work (DFES 2001). To be fair it also emphasizes the use of small-group work but the strong emphasis on whole-class teaching might be considered questionable given that all children in the class may not have the same phonological learning needs. I should point out though that the evidence from the NRP in relation to the development of phonic knowledge, unlike that of phonemic knowledge, is that there appears to be no significant difference between different organizational arrangements i.e. the review found no effectiveness difference between small-group and whole-class organizational strategies.

The sequence of phonological development specified by the NLS could be problematic insofar as the evidence currently available is neither definitive about the best sequence nor the amount. There is some evidence to suggest that a little phonological awareness goes a long way and it may be

that, with the emphasis on delivery in a whole-class setting, the NLS over-emphasizes it, at least for some children. Finally in relation to this particular aspect, you could question the balance between the part-to-whole and the whole-to-part nature of the activities and games, or, to use the language of much of the literature reviewed above, the bottom-up versus top-down emphasis. There is a very strong emphasis on part-to-whole or synthetic phonics and considerably less on whole-to-part or analytic phonics. There is evidence now that both are needed. However, this evidence was not available at the time the Strategy was being developed.

The NLS places considerable emphasis on comprehension and on reading for information. Leaving aside the prescriptive nature of the pedagogy, the emphasis on text comprehension is entirely consistent with the evidence from this perspective on reading.

PART THREE
A SOCIO-CULTURAL
PERSPECTIVE
